The Builder.

No. CCCLIV.

SATURDAY, NOVEMBER 17, 1849

PRECISION and clearness in specifications, on which contracts are to be made, are absolutely necessary. We have before now urged this, and have pointed out that great differences between the tenders of different individuals for the same work, are sometimes owing to the looseness and defectiveness of the specification. A curious case has been recently settled which illustrates the necessity of this precision very rigorously, and it may be quoted with the less hesitation, because it does not necessarily involve the imputation of that want of care in drawing up the specification to which we have alluded. The matter is in other respects instructive, and may be usefully set forth: we will premise, however, that when we applied to the contractors concerned, for such papers as would establish the correctness of the information we had obtained from various quarters, they thought themselves bound to refuse it, and we mention the circumstance, that they may not be considered privy to this publication; small praise, however, according to our notions. And we would here take the opportunity of remarking, that if there were more willingness on the part of architects, builders, and arbitrators, than is often observable, to giving publicity to questions of practice which come before them, advantage to all would result. We may find an occasion, however, to enlarge on this text, and to say a word or two to some of our architectural *friends* individually, which they may or may not like,—just as they please.

The justices of the peace for Hampshire have recently built, as our readers know, a county prison at Winchester;—it is scarcely finished yet, we believe. Mr. C. J. Peirce, is the architect, and Messrs. Locke and Nesham the contractors. In the contract it was a stipulation that Professor Hosking should determine any question which might arise between the parties in respect of the works; and in the specification which formed the basis of the contract was the provision, that all the windows in certain parts of the building should "*be glazed with* ROUGH PLATE, $\frac{1}{4}$ *inch thick*." Nothing to the half-learned mind could seem clearer,—one provision was as understandable as the other,—the identity of our acute friend the professor, and of *rough plate*, appeared equally unmistakeable,—the difficulty of seeing through either equally great: and yet what followed? We shall learn.

Well, the windows were glazed,—had been so for some time by the way,—when the magistrates one fine morning discovered that the glass with which these windows were filled, was not the "rough plate" which they looked for, namely, that thick cast glass recently introduced, with a roughened surface, through which roughness there is no transparency, although the glass remains translucent,—and which indeed is the condition of all cast plate glass before it is ground and polished. The glass really used was plain on the surface, generally transparent, and, as admitted by the contractors, was produced by blowing. The contractors denied that the term, "rough plate," is applied exclusively to rough *cast* plate, and alleged that the glass objected to was known as "rough plate," and that it was commonly sold under that designation before cast plate came into the market in its rough or unpolished state. Further, as to the propriety of applying the term "plate" to a blown glass, that although the glass in question is blown, the cylinder into which it is blown is at once cut down and flattened on a plate,—that it is susceptible of being ground and polished, and has been for many years so treated and sold for all the purposes of plate glass. Some few of the windows in the prison, we should have mentioned, are glazed with the rough cast plate.

The question then was, has the quoted provision in the specification been complied with? and to determine this, Mr. Hosking was called in, and took evidence.

The question of thickness was waived or withdrawn by the justices, so that the only point of inquiry was,—is the glass used "rough plate?" On the part of the magistrates, Mr. James Hartley, of Sunderland, a well-known manufacturer, stated positively that the glass used was *not* rough plate, but sheet glass manufactured to imitate it, one side being slightly burnt to diminish its transparency. This witness, as we gather, set forth some particulars which may interest our readers. He said that all the various descriptions of window glass are manufactured from the same materials—sand, soda, and lime—the various qualities of glass being produced by the differing proportions and purity of these substances. Glass is formed into flat surfaces in three different ways:—1. By blowing it into a globular form and then throwing it into a flat plane, — this is crown glass. 2. By forming cylinders, which are cut open and then flattened,—this is called cylinder glass, broad glass, blown plate glass, &c.: and 3. By pouring melted glass upon a metallic surface, and passing over it a heavy roller, to reduce it to an even thickness,—this is termed rough plate glass, cast plate glass, rolled glass, &c. It is the contact with the cold surface on which it is cast that causes the roughness, by unequal contraction.

Mr. Hartley asserted that the glass in dispute belonged to the second process, and that the term "rough plate" had never been applied to such by the trade. He was astonished that any person conversant with the glass trade could call the glass used "rough plate," or that there could be any difference of opinion as to a material now so much used and so well known. Mr. Hartley also quoted other specifications, containing precisely the same description, "rough-plate $\frac{1}{4}$ inch thick,"* for which, as a matter of course, the cast glass had been supplied.

Mr. Fincham, of Ravenhead, St. Helen's, said the glass in question was not "rough plate." Rough plate had been introduced by him, as manager of the British Plate-glass Company, ten years ago, for the express purpose of giving light where the glass was not to be seen through. German sheet, blown in cylinders, had been polished and sold under the denomination of patent plate-glass; and the glass in question was this description of glass, before polishing, that is in its rough state; but no dealer would accept the one for the other, although, for some purposes, the "rough patent plate" might be preferable.

Mr. Souper, secretary of the Thames Plate-glass Company; Mr. Christie, agent for the Union Plate Company; Mr. Hetley, of Soho-square; Mr. Millington, of Bishopsgate-street; Mr. Wilson, of the British Plate-glass Company; and Mr. Goslett, of Soho Plate-glass Warehouse, all denied that the material used could be called "rough-plate," or bore any resemblance to it.

Now, let us look at the other side of the picture—or, rather, of the glass,—and we shall see that there are other doctors who differ besides Ure and Playfair.

Mr. Young, of St. Martin's-lane, had no hesitation in saying the glass in question had always been considered by the trade rough plate, and, though in the business fifty years, had never seen or heard of any other description of glass so called. Mr. Swinburne, of Thames-street, said it was "blown rough plate-glass." Mr. Brackman, a practical man of many years' standing, had sold it as "rough plate" when foreman of the London Works. Mr. Chater, of St. Dunstan's-hill, had supplied both cast and blown as "rough plate" for thirty-six years. Mr. R. Cobbett, of Northumberland-street, considered both kinds "rough-plate." Messrs. Foord, who hold the contract for glaziers' work under the Office of Woods, considered that both cast and blown were equally entitled to be called rough-plate, and thought that the specification would be strictly followed out by supplying either one or the other. The blown rough-plate was made in this country before cast rough-plate, and was therefore more entitled to the term. They said, moreover, that as there was no difference in the price, the contractors had no motive to use one in preference to the other beyond that, for smaller sizes (under 40 inches by 20 inches), the blown could be obtained more quickly than the cast.

Professor Donaldson, who appeared on the same side, referred to the volume in "Lardner's Cyclopædia," on porcelain and glass, in the introduction whereof two descriptions of plate-glass, blown and cast, are recognized.

Messrs. Piper, Messrs. Lawrence and Son, Messrs. Haward and Nixon, Mr. W. Cubitt, considered that the glass fully met the requirement of the specification, and Mr. G. Pownall said it was "rough plate-glass," and that it could not be described in any other way.

In considering his award, Mr. Hosking properly declined to consider, as not within the question before him, an argument on the part of the contractors, that any objection to the glass ought to have been taken when it was first put into the work, and one on the part of the justices that "rough-plate" was specified for the express purpose of obtaining absence of transparency, while the greater part of the glass used *is* transparent. The justices had put their objections on three grounds, thus expressed:—First. That the words *rough* and *plate* in the specification were to be held each to have a certain meaning; secondly, that the article objected to did not come under the description, inasmuch as it was blown glass, smooth on both sides, but afterwards slightly roughened on one side; and thirdly, that it was not what is ordinarily understood and known in the trade by the term rough plate.

The arbitrator shaped his award to meet these heads; and set forth—"First, that the words *rough* and *plate* in the specification are not to be held to have each a certain meaning, but that they are to be taken together, as denoting a certain condition of plate glass—that is to say, in its unground and unpolished state; secondly, that inasmuch as the glass

* It is necessary to specify thickness, this and consequent price varying up to 1 inch.

objected to possesses the characteristics of plate glass, and is made and used as and for the purposes and under the name of plate glass, the circumstance of its being produced by blowing and having a smooth surface when first produced does not prevent it from coming under the description given in the specification; and thirdly, that the article objected to —that is to say, blown plate glass in its unground and unpolished state—though not universally known in the trade by the term "rough plate," is so far known by that term in the glass trade and among builders, the immediate consumers of plate, sheet, and other glass, as window glass, as to justify its recognition by that term."

And he therefore determined that the glass objected to *is* within the terms employed in the specification.

We give the particulars of this curious case (without reference to the decision), because of the positive information it contains, and as an instance of the necessity of precision in specifications, which we hope will not be disregarded. A considerable expenditure was at stake.

DECORATIVE ART IN GLASS—
STAINED AND PAINTED.

In concluding his historic review of middle-age art, delivered of late at the School of Design, Somerset House, Mr. Wornum proceeded on Friday, the 2nd, to treat of stained and painted glass, as in a manner supplementary to Gothic art, since hitherto almost exclusively practised in Gothic buildings. But whatever prestige such exclusive application may have given rise to, said the lecturer, it will be our business rather to destroy than to encourage; for we must spread the beautiful in all directions,—extend it to every province,—at least we will try to do so.

The old Egyptians have not yet been surpassed, if even approached, by the moderns in the art of staining glass; but we know nothing of stained windows earlier than the eighth century, and have no *remains* of a period earlier than the twelfth.

The ancients, however, did glaze their windows not only with common panes of glass, but with ground plate glass, to keep inquisitive eyes out: a window of this kind was discovered in a bath at Pompeii, but the glass was all broken to pieces. In the baths of the villa of Diomedes similar glass was found. The Greeks called glass 'hyalos,' from the Coptic: it was introduced from Egypt.

In mere coloured ornamental glass the resources of the ancients were surprising. There was no marble, no precious stone, which they did not successfully imitate. They had every variety of cup and vase made of this beautiful material. Glass drinking vessels were common in the time of Hadrian, and some of them, of rarer quality, displayed all the prismatic colours, variously in various lights. These were of Egyptian manufacture. With the art of glass blowing, as may be conceived, the ancients were well acquainted.

With all the means such examples imply, the *absence* of coloured plate glass for windows amongst the ancients should strike us as more singular than the *discovery* of any such remains; especially as it was the custom to decorate entire walls with plates of glass and polished marbles; and as the marbles were invariably coloured (and as they knew well how to imitate marbles, as already remarked by the lecturer), it is highly improbable that the glass was invariably white. Yet the pure crystal glass was considered the most valuable by the Romans. Talc was also used by the ancients for windows, having this great advantage for a hot climate, that it excludes the heat while it admits the light of the sun. As to the ancients having had glazed windows there can be no question, and this fact ascertained, it would be very strange if with their elaborated systems of decoration, they did not colour them. We shall probably yet find some examples before the excavations of Pompeii are completed.

The notices of windows are more frequent as we approach the middle ages. St. Sophia's, of Constantinople, was conspicuous for the number of its glass windows; and, from the many-coloured rays which the Greek poet describes as penetrating them, it would seem that they were of stained glass. This was in the sixth century, and it appears to have been then a general practice in the southern parts of Europe to glaze the church windows. In England they were not so protected till a century later.

The first positive historical notice of stained glass decorations, the lecturer believed to be that of the adornment of the old church of St. Peter's, at Rome, with stained glass windows, by Leo III., in the eight century. Painted glass we first read of in the eleventh century, when mosaic workers from Constantinople adorned the chapter-house of the celebrated Neapolitan Monastery of Montecasino, with windows of painted glass. These were leaded, and supported by iron frame work, as in modern times.

This mention of the mosaic workers, while it constitutes one of those interesting facts which point so decidedly to the capital of the Eastern empire, as the great preserver and promoter of all middle-age art, seems also to indicate, with some certainty, the original source of stained-glass windows in the glass tesselations, the opus Grecanicum of the Byzantines. With this class of art the Italian churches were richly decorated, and the passage from the inlaid glass of the walls and pulpits to the leaded glass of the windows, was not a very great step. This is all the more probable from the circumstance, that while these glass tesselations were common as mural decorations, pieces of talc were still used for windows, as in the church of San Miniato, at Florence, of the early part of the eleventh century; and if these be the original windows, which there is no reason to doubt, they are the oldest in Europe, or at least in the west, and are about 100 years older than the earliest remains of stained-glass windows—those of the cathedrals Angers and St. Denis.

Many of the glass tesselations, according to Theophilus, were actually destroyed for the sake of getting coloured glass for windows. They were of course remelted and cast into small plates, according to the practice of the time. Theophilus also says, that the French were particularly clever in converting the old pagan glass vessels, of many colours, into fine tables, that is panes, of glass, for windows. There would have been more reason for praising their ingenuity if they had preserved the pagan bottles and rivalled their composition by original glass of their own. But such passages as these open our eyes to the way in which ancient ornamental works have so greatly disappeared; and they should teach us to be cautious how we discredit statements we find in ancient authors, simply because we meet with no examples of such works as we occasionally read of in their writings.

The ancient process of making a stained glass window is thus described by Theophilus. The design was first made on a chalked board, a kind of cartoon. On this the outlines and general markings were well defined, and the colour each part was destined to be was written in its place. Then a piece of glass of the required colour, large enough to cover that portion of the cartoon inscribed with its name, was placed over it; the exact form of the space was traced on the glass; and finally, it was shaped with the heated iron then used in place of the diamond. The pieces were then all fitted close together on the cartoon, and the lines and shadows were carefully painted in enamel brown. The introduction of ornaments, such as we find in the illuminated manuscripts, is then directed by Theophilus, a circumstance which points most decidedly to the source of the general ornamentation of glass. He concludes by minute instructions how the pieces of glass are to be fired in the furnace, some colours requiring more heat than others: the white, yellow, and purple may be thrust far into the furnace, but green and sapphire, or blue, must be kept near the orifice, as they will not stand so great heat. When sufficiently fired, the various pieces were leaded together, and the picture thus completed. Theophilus describes many kinds of ornamental glass, including gold and silver tints, and designates nearly every remarkable specimen Greek.

The great point of the directions given by this author is, that he clearly describes the enamelling of glass, however simple; not the mere composition of an ornamental design in coloured glass, or what is commonly called pot-metal—glass coloured bodily while in the melting pot; but the enamelling confined to drawing and shading. The great value, however, of Theophilus's treatise, is affected by the doubts as to its precise date—according to some as early as the tenth, to others as late as the thirteenth century.

All the ancient specimens of stained glass preserved are pot-metal; and the earliest middle-age windows were doubtless of this same description: it is to this nature, perhaps, that they owe their name of mosaic glass, if not to the fact of being made out of old glass mosaics.

In the fourteenth century this practice of using pot-metal was in great part superseded by the use of superficially stained or coated glass. This is made either by flushing or floating an enamel stain upon the glass, and then firing.

In the sixteenth century, a third process was introduced,—that of actually painting in enamel, similar, exactly, to the modern process of porcelain painting.

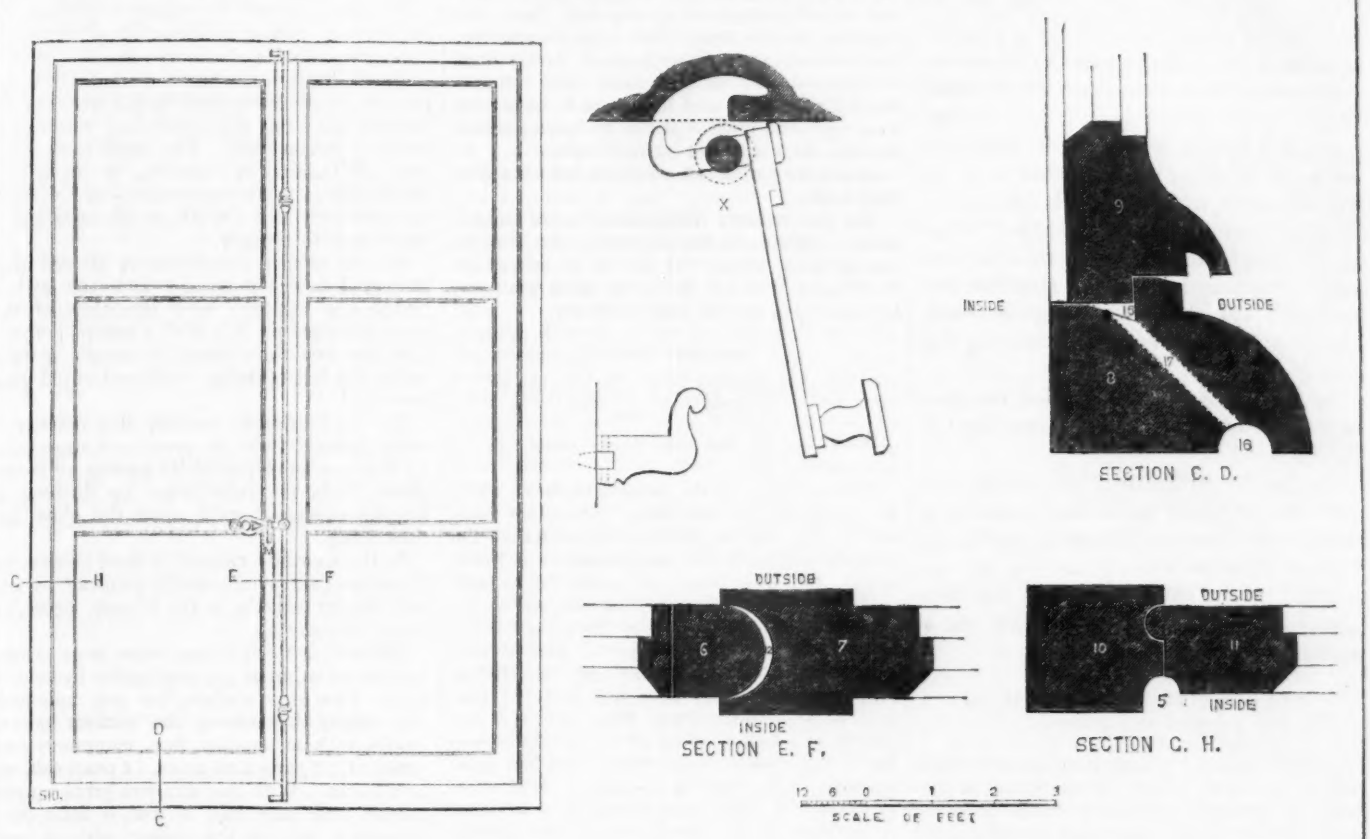
Enamel, as many of you know, is glass made opaque by oxide of tin, and fusible by oxide of lead. This gives a white, but you may make any colour by mixing the various mineral oxides with an enamel flux, commonly composed of 32 parts flint glass, 12 pearl ash, and 2 of borax. With this flux you grind up your colour, and then mix it with a little oil of lavender; lay on the colour with a sable pencil, exactly as in oil painting, then pass the picture through the fire and the whole vitrifies and becomes indelible. The metallic oxides being enveloped in the flux are preserved from contact with the atmosphere, and thus become permanent.

The lecturer then proceeded to review some examples of these three kinds of stained or painted glass, interspersing his descriptions with much interesting matter, which we regret to be obliged to pass over. In allusion to the monk Theophilus's idea, that tan colour constituted the proper flesh tint, he inferred that this little circumstance would appear to throw some light on the moot point of the country to which he belonged. Both the Germans and the Italians, he remarked, have claimed him, but the tawny flesh seems fairly to give him to the Italians. With regard to the sombre mellowness of tint in old coloured glass, the lecturer regarded the taste in its favour as an acquired one, to which it was but little entitled, considering that it was merely produced by the dirt from which modern glass is more thoroughly cleansed in the process of manufacture. But from whatever cause produced it remains to be considered whether or not such a sombre and mellow effect be not the best adapted to ecclesiastical purposes. On the subject of harmony in juxta positions of colour, he considerably enlarged, producing a host of evidence in illustration from the beautiful plumage of birds in the British Museum and elsewhere. Perhaps in no species of art, he remarked, is it more necessary to observe the laws of harmony in colours than in glass painting. By the physical organization of the eye it requires *all* the primary colours to satisfy it—red, yellow, blue: the secondaries—orange, green, and purple—too, are very important. No combinations are good which are not in accordance with the natural laws of colour, and the chief condition is, that *all* must be present in every composition and properly balanced.

Having explained the three methods of glass painting, the lecturer then proceeded to point out the various characters of design prevalent in the different periods.

In the early period, down to the fourteenth century, when the mosaic method exclusively prevailed, the windows consisted of diaper grounds, containing panels with figure subjects, scriptural and domestic; the whole being surrounded by a foliaged or geometrical border; the prevailing ornaments and the panels being of a Byzantine character, and in all respects similar to the MSS. There is not much early glass in England. The most per-

DETAILS OF A FRENCH CASEMENT.



fect examples are the celebrated Five Sisters, at York, of thirteenth century. At the close of this century isolated figures were introduced, surmounted by simple canopies and without foliations. The variety of design, therefore, as applied to glass, even at this early period, was very great.

In the second period, all these varieties were preserved, but the mere Mosaic patterns are no longer prominent; the damask and geometrical designs on white glass gradually superseded them. Some of the finest windows of this style are a geometrical design, with a belt of canopied figures; the execution of the figures, foliage, and architecture keeping pace with the generally improved development of style and execution. Heraldic designs now common; and in the fifteenth century prevail.

It was in the sixteenth century, however, coincident with the development of Cinque-cento art, that glass painting appeared with all its technical exuberance. Its limits were now the limits of the art of painting itself. The Mosaic process was almost wholly discontinued for a time, and glass painting became literally painting pictures on glass; but it did not combine any improved character in its ornaments. The increased recourse to figure pieces and pictures, and the excessive display of armorial bearings which characterize the windows of this period, seem to have left little opportunity for the development of ornament itself. The celebrated windows of the Crabeths at Gouda, in Holland, are a remarkable monument of that period, but they are literally mere Dutch pictures on glass; some of them, as well as the magnificent windows of Liege, have been lately published by Mr. Weale, in two volumes, entitled, "Divers Works of Early Masters."

On styles, added the lecturer, in conclusion, I have yet a few remarks to make. Early mosaic glass has been recently designated Early English glass, as it was the style practised during the prevalence of the Early English Gothic. It was practised, however, a hundred years or more before the Early English Gothic was developed, and was at all times far more universally practised on the continent than in England. The same objection holds with regard to the terms Perpendicular, Decorated, and Cinque-cento glass. These architectural terms, as applied to glass, have not a characteristic but a chronological value only; and as to "Early English" glass, it is scarcely good taste to give an exclusively English name to a style of art for which we must look abroad for all the fine examples.

Any style of ornamental design may be executed in any one of the three methods of glass painting just described,—the mosaic, the mosaic stain, and the enamel. We must not confound the method of execution and the style of ornament. Every design will, by its ornaments, itself proclaim to what style it belongs, if to any one in particular; and if not, it will require no name beyond the technical description of what it contains,—as coloured diaper, flowered quarry, reticulated damask, medallion, figure, canopy, &c.

In designing a stained glass window, therefore, first consider whether it be ecclesiastical, palatial, or domestic; then its architectural style. Introduce the characteristic ornamental forms into your design; if a figure window, into the border; if a mere pattern window, into the general arrangement. For a Greek or Roman building, use Greek and Roman ornaments; for an Italian—Renaissance, or Cinque-cento forms; and for a Romanesque, or Gothic, the Byzantine and Gothic forms. Your figure subjects will be, of course, for a church, scriptural; for a palace they may be historical, with armorial designs; and, for a private dwelling-house, armorial and sententious designs, or illustrations of proverbs, are very applicable. There need be no closer limitation of style, and these designs may be executed indifferently, to individual predilection, or means, either in the mosaic, in the mosaic stain, or in the enamel method.

There will be demurrers to these opinions.

Corrugated Iron Roofing.—With reference to the memorandum of the cost of roof coverings, taken from Mr. Dean's "Essays," I would observe, that if the covering of corrugated iron be made circular it will require no other support than at the extremities or springings, whereas in all the other kinds mentioned a price must be provided in addition for rafters and battening. Curved roofing of corrugated iron is self-supporting (the springings of course being secure); the other kinds require a construction of timber wood-work to support them; therefore, before the cost of curved galvanized corrugated iron roofing can be compared with that of others, a price must first be added for their necessary support. Peter.

DESCRIPTION OF A FRENCH WINDOW,

FROM MATERIALS FURNISHED BY AN ARCHITECT OF PARIS.

The accompanying drawing has been obtained from Paris, expressly for the purpose of affording accurate and sufficient information to work by. The description will be somewhat minute, to make it, if possible, perfectly intelligible.

It will be understood that the window consists of two halves, hung upon hinges, closing together like a pair of folding doors, and opening inwards; also, that the window is supposed to be viewed from the *inside*.

The means of fastening the window (and which it is important to attend to) consist of a round bar of iron, B, running from the top to the bottom, and hung in two rings, O, at the points *o*. These rings are fixed on the inside, in the wood of the right hand casement, or half of the window. The bar must be capable of turning in them to an extent afterwards explained.

Figure A represents a handle fixed on the bar at A, as will be seen in the figure; it is fixed on a projection from the bar, and must be moveable, circularly, in a vertical direction, the axis of the circular movement being the point where it is fixed to the projection. The bar terminates at each end in a hook, 3 and 4. In the head and cill, 1 and 2, of the outer, or fixed frame of the window, holes must be chiselled out at 3 and 4, to receive these hooks, which will help to fasten the window, in the manner afterwards explained.

Figure M is a kind of hook fixed in the wood of the left hand light, at the point M. Its purpose is to receive the handle A, when the window is closed, as will be explained. It must be hinged, and thus have the capability of moving, horizontally, right and left (to an extent afterwards explained), as will be understood by the figure. Figure *g h* represents a horizontal section of the casement at *g h*, 10 being the frame, and 11 the casement.

In a window of the size given in the drawing, three hinges (ordinary kind) at least should be used for each of the halves; they will be placed in the hollow 5. E F is a horizontal section of the casements at E F, where they meet, when closed, 6 being the left hand, and 7 the right hand light. 12 is a small space left between the two frames, in order that they may close without difficulty. C D shows

a vertical section of the cill and inner frames, at C D, 8 being the cill, and 9 the casement. 17 is a circular hole, bored through the cill, at the point 14, for the escape of any water that may get into the space 15. 16 is a groove, or inverted gutter, for carrying off the water.

The exact forms of all these sections must be particularly attended to in execution.

When it is desired to close the window, the two halves are pushed together, and the convex surface of 6 fits into the hollow in 7. It will be found that these parts will touch before the window is fairly closed, and that, by the exertion of a little force, they are, as it were, slipped or snapped, the one into the other. The handle A is moved from the right to the left, and lifted over and into the hook M, and this hook M being at just such a projection from the frame, as to cause the handle to fit tightly into it, the forcing down of the latter upon the hook at P jams or locks together the two halves. At the same time, the moving of the handle A from right to left will turn the bar, and the hooks 3 and 4 will enter the holes prepared for them in the head and cill. These hooks, before the handle was turned, would show in a section of the bar and wood, as in figure X.

The window will then be securely closed. It will be observed that, besides the excellent adaptation of all the joints to resist weather, the advantage of this mode of fastening consists in this, viz., that by a single movement, *each* of the halves is bolted in three places, and indeed firmly secured to the other half *throughout the whole height of the window*, and that, also by a single movement, *both* halves are set at liberty; whereas, upon the ordinary principle of folding doors or windows, the left hand half alone is secured at top and bottom, and the right hand one depends for its fastening upon the single bolt or latch which connects it with the other half, and this imperfect fastening of the halves, moreover, requires three separate movements to complete it, or to set it at liberty, the practical consequence of which is, that to avoid trouble, the right hand half alone is opened.

With respect to the extent of movement respectively of the bar B, the handle A, and the hook M, it will be easily understood after due consideration of their respective purposes.

The turning of the bar, being for the sake of the movement it communicates to the hooks 3 and 4, that purpose will be amply answered by a power of turning in a quarter of a circle.

The hinging of the hook M appears to be contrived to give the play necessary to assist the jambing or locking before mentioned. The handle A may of course be placed in the most convenient situation for the hand, depending upon the height of the window from the ground. In windows of a larger size than the one represented in the drawing, a rail or transom runs across each of the halves, at about two-thirds of their height from below, giving the whole the appearance of a cross. Hence, the French word *croisée* for a window.

A prejudice exists with English people against casements, as not being wind and water tight; and it is true, that what are understood by French windows in England, that is, French windows *made in the English way*, are, generally speaking, as imperfect and unsatisfactory contrivances as can be imagined. But the real French window, as made in France, and made well, is perfectly secure against weather.

Its advantages are great. When open, the whole space made available for the purpose of admitting light is also made so for the admitting of air; whereas, in a sash window, one-half of that space must necessarily be always closed.

The view through it is uninterrupted; whereas, in sash windows of the ordinary size, the main bar, where the sashes join, is about on a level with the eye. The inconvenience of stooping the body to look out of the window is also avoided. From the necessity of this posture, with the sash hanging over the neck, the French call sash windows *fenêtres à la guillotine*, or guillotine windows.

The strength shown on the drawing is, perhaps, hardly sufficient for any but small sized windows, or where tough woods are used.

The drawing comprehends what has been found to answer well in France, where this kind of window has been used, it may be safely said, for a century at least, universally, and in buildings of a superior class, for upwards of 200 years; for, in that country, leaded lights were disused much earlier than in England. French windows have hitherto failed for the most part in England, *merely for want of accurately copying the model which has been proved to succeed in France.*

In France almost all windows have wooden blinds fixed outside; and in some situations in England these might be found useful. When combined with the French window they afford the means of admitting an abundance of air, and at the same time excluding the glare and heat of the sun.

F. I. D.

IMPROVEMENT OF BROADWAY, NEW YORK.

From the battery almost to Union-square this grand promenade of our transatlantic brethren has of late been renovated and improved in its buildings, its pavements, and its side walks; indeed, its buildings have been or are being so throughout the whole of its length, so that many old land-marks are vitally altered or altogether gone. No. 1—General Washington's house—has been converted into "The Washington" Hotel. On the site of Bunker's mansion and adjoining properties six extensive stores are being erected, five stories high, with brown stone fronts, and iron shutters and floor columns. The brown stone is in general a mere facing of two-inch slabs on brick. Mr. C. S. Warner is the architect. Four new stores are in process of erection on the site of the old City Hotel. Mr. J. French is the architect of the whole of this block between Cedar and Thames-street. The frontage of the stores is 102 feet, depth 142. They are to be five stories in height, and to cost 100,000 dollars. The fronts will also be of brown stone, and the first story ornamented with fluted columns and pilasters, with Corinthian caps and medallion cornice; the windows trimmed with architraves and cornices. Opposite, on the site of the old National Hotel, a 'splendid' silk warehouse is in course of erection. The front is to be in the Elizabethan style, and the material West Chester marble, in blocks 3 feet thick. The lower story will be faced with a series of ornamental columns, standing on strong plinths in front of piers supporting a frieze and cornice. On these will stand other pilasters with intervening pedestals, elliptical arches with ornamented keystones over the windows in each story, the whole to be surmounted with a cornice and elaborately carved open parapet, ornamented with pedestals and urns, resting on corbels and brackets. The central portion of the parapet will be elevated above the rest, and terminated by solid marble balls. The floors will be supported by wrought-iron beams, and each floor will present an unbroken surface of nearly 5,000 feet, the building being 140 feet deep, and 37½ feet front on Broadway. The architect, Mr. Joseph Wells, expects to complete the building by 1st December, at the estimated cost of 40,000 dollars. Various other stores, chiefly faced with brown stone, are at present in progress, and near Chamber-street, 'a very tasty and elegant structure,' according to the local statements, is being formed for the Chemical Banking Company, at a cost of some 15,000 to 20,000 dollars. Messrs. T. Thomas and Son are the architects. The style is called the 'Romanistic,' with an elaborate entrance and heavy truss cornice. The banking room will be 17 feet in height, with a frescoed dome ceiling. Part of the street is being laid with 'Russ pavement,' by Messrs. Russ and Reid, who estimate the cost of laying the whole street with blocks of this species of pavement at 320,000 dollars.

Drawing Academy.—On the score of long service in the cause, Mr. R. Brown's intimation, through our advertising columns, that he has opened a Drawing Academy in Knightsbridge deserves to be pointed out. He numbers amongst his many pupils of former days some of the leading architects and builders of the metropolis.

THE MOVEABLE TIME-TABLE OF THE EASTERN COUNTIES RAILWAY.

We have been asked to inquire what, in the name of all that is erratic and unbusiness-like, can lead the directors of the Eastern Counties Railway to perplex poor travellers as they do by altering backwards and forwards the hours of train departures? Our own experience fully justifies the inquiry. A fortnight ago we travelled to the far-distant Shoreditch, in time for the half-past ten train, to Hertford, and, getting there twenty-five minutes too soon, as we fancied, found we were nevertheless five minutes too late, the train having started at ten, and so we had to wait till half-past eleven for the next chance. On Saturday last we were compelled to retread the ground, and took care to be there before ten, when lo, and behold! the time was again changed to half-past ten; and forty more precious minutes had to be spent in the drafty station-house.

Surely the good-natured and sensible secretary of the company, Mr. Roney, can have no voice in these vexatious vagaries, made seemingly for the fun of the thing. To occupy an hour and twenty minutes and oftener an hour and a half in doing twenty-six miles is bad enough, without throwing out one's whole day by such vacillating misarrangements as these.

KENILWORTH-STREET SEWER.

Sir,—In your number of to-day you refer to the extraordinary charge of Dr. Ure, made against me by implication, that I added copperas to the sewer water, for the purpose of removing the prussic acid. You seem to think that I should deny this infamous charge, if it be untrue. I have not done so, because I thought that the spirit in which it was made would prevent any person giving the least credence to so monstrous an accusation. But I bow to your opinion, as I should be sorry that a single honest man could believe me guilty of such an act. I therefore state that I have not the most remote knwledge, either directly or indirectly, of such a sophistication having been made. I further express my disbelief that this act has been perpetrated by any one.

I cannot conclude without expressing my astonishment that any scientific man, even in the tumults of the most uncontrolled temper, could have insulted his profession or the public by a calumny so inconceivable and preposterous.—I am, Sir, &c.,

November 10th. Lyon Playfair.

*** We hope Dr. Playfair does not imagine that our *credence* is so easily accorded as he would seem to fear. But however unworthy of notice such a charge may be generally held to be, an indignant denial at least renders it impossible for a party capable of propagating a false or reckless charge, to make any equally wrong use of the fact of its *not being denied*. Dr. Ure, without waiting, we may here remark, for any such denial, has issued a fourth report, as to which we do not see any necessity for further notice, unless it be to remark, that the sudden death of the man Grosse, in Long Acre, seems entirely to refute his assertion in it, that "an inhalation of *prussic acid vapour mixed with* sulphuretted hydrogen *alone could* cause such an awful catastrophe." But for all that, we do not doubt the probability that other of the "hydras dire" than mere sulphuretted, phosphoretted, or even cyanuretted hydrogen or prussic acid may occasionally pervade the heterogeneous abomination of sewers. Indeed, to any one at all acquainted with the still more recondite, and one might have almost said rare, hydride of selenium, or seleniuretted hydrogen, and its *very peculiar* odour, even that might fairly have been included, however unaccountably, in the list just particularized. We may here add by the way, that Mr. Cubitt, though no tangible charge was made against him touching the construction of this sewer, has addressed the commissioners in an explanatory letter, regarding which all we need say is, that we think the commissioners should, as Mr. C. requests of them, distinctly state that everything which was required of him had been done.

SHALL ARCHITECTS BE DIPLOMA'D.

I AM glad to see that the columns of THE BUILDER are still occupied in reminding the Council of the Institute of British Architects of the necessity for amending the laws which govern their body. The observations in answer to your correspondent, "W. X. W.," were very just, and are, I imagine, pretty nearly the feelings of three-fourths of the profession; but I was somewhat surprised, on reading through the article on the amendment of the Institute of Architects (knowing the interest you take in the welfare of the profession), to find that you seemed to throw cold water on the proposal to obtain a legislative enactment forbidding any architect or engineer to practise without a *diploma*. Now, Sir, I am fully persuaded that this is the only means whereby to ensure proper and qualified practitioners in our art.

You seem to reason, Mr. Editor, that "it is not desirable." I consider that if architects have to erect buildings and works, and are thereby entrusted with the lives and property of her Majesty's subjects, they should be compelled to take out a diploma of capability authorizing them to practise as such, in the same way as gentlemen of the law, medical men, and even chemists and druggists, have to do, before they can practise in either of their respective capacities. It would not only render the profession more respectable, but it would give a dignity to its practitioners. The public would look at its members as duly qualified and honourable men, and not disregard our talents, as they evidently do at the present, as may be proved by the most disgraceful and shameful way in which competitions are conducted; in fact, if diplomas were granted, then none but men properly schooled into the profession would be among its members.

You remark also that "it is opposed to the spirit of the times." I am sure no opposition would be met with in the majority of the profession of architects themselves,—they are really yearning for such a movement, and I could almost speak positively that if a petition were set on foot for such purpose, it would be signed by at least three-fourths of the members of the body. If opposition to this diploma scheme be meant in your remark to refer to the public, I think it is no more than in accordance with reason that they would feel satisfied to know, that no person could practise as an architect or engineer without being duly qualified to act in such capacity; 1st. For the reasons abovementioned; and 2ndly. It would prevent their employing any incompetent person, or mere quack, who would, in all probability, injudiciously expend their clients' property.

X. X.

1st. You say, "that *a diploma in architecture* is by no means likely, even if it were in all respects desirable." Now, as to the likelihood of the renovation,—I believe the time is not far distant when we shall see it brought about; but as to the desirableness of such a scheme, every architect who has the least love for his profession must desire it, if only to rid us of the innumerable set of quack draughtsmen who are now being quarterly manufactured at the low rate of ten guineas. My office, Sir, is literally besieged by them, trying to obtain employment; yet they cannot draw a straight line. Again, many architects have now in their offices young men, without any premiums being given, who have no love for the profession they are unfortunately placed in, but because it was a good opening they *must become architects*, not considering that an architect *must have a mind*. What is the consequence? Why, at the end of their articles they cannot explain the ruling principles that exist either in Grecian or Roman architecture; they may know the five orders when placed before them, but, Sir, in many cases that is the utmost, and I am fully aware from experience I am not exaggerating. Yet when their articles are concluded, they expect and ask for the same remuneration as clever draughtsmen, swell the number of that class, and in many cases have unhappily opportunities given them of piling up living monuments of their ignorance, to disfigure the face of this glorious land and disgust the eyes of every beholder; whereas the experienced, fully qualified, and clever man, is thrown aside. I will not speak of the injurious system of employing builders as architects, because that would soon die away if we had a properly qualified body of professional men. You say the spirit of the time is directly opposed to such a restriction. Then, Sir, how do you reconcile the establishment of the Pharmaceutical Society for the examination and granting diplomas, even to druggists? If it can be done in one case, it can in another; *if it be desirable*, do not talk of the spirit of the times being against us, but let us try and obtain it: the greater the difficulties, the greater the glory in winning.

A PRACTITIONER.

It has often appeared to me a sad mistake that a profession like that of architects should be split into several societies (no one of which is sufficiently powerful to carry with it the feeling of the whole body, nor the acquiescence of the public), instead of having one grand and comprehensive scheme of union for its members, which should indeed improve, exalt, and raise their own character, and at the same time command the esteem of the public. Nothing short of a College can be expected to have this desirable effect.

To make the profession respected, and its professors respectable; to rescue the calling of an ennobling pursuit from the grasp of the mere adventurer; to give a tone to public taste, to instruct, enlighten, and improve, would be the praiseworthy (and successful) endeavours of a college established by the general consent of the profession. In a few words one may state some of the advantages which would attach to an architectural college of enlarged membership under a charter: a school of instruction, not to interfere with private tuition, but rather to complete the education—a comprehensive library—a museum—a collection of models of ancient and modern buildings—experiments in different arts—laws to establish precedents—periodical meetings for lectures and discussion—a thorough understanding of the position of architects—a court of appeal in all matters of dispute or etiquette, and a provision for decayed members, their widows, or orphans.

G. R. FRENCH.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

PUBLIC MEETING, NOVEMBER 9, 1849.

MR. PETTIGREW, Vice-President, in the chair.

Mr. Purland exhibited a collection of rubbings of some of the most interesting brasses in the churches of Norwich, accompanied by some descriptive remarks.—Mr. Waller observed that the greater part of these brasses belonged to civilians, which was to be accounted for by the extent to which the clothing trade was carried on in the eastern counties. He likewise drew attention to a brass, of the latter part of the fifteenth century, belonging to a knight, the inscription attached to which is about a century later, and relates to another person. He remarked that many of these brasses showed a peculiar mode of forming the features used in Norfolk and Suffolk, and some were evidently Flemish. Much has been said about the destruction of brasses during the civil wars, but a far greater havoc has been committed in modern times. He had sought in vain in many of the churches of Norfolk and Suffolk for brasses figured in Cotman and other authors.—Mr. W. A. Combs exhibited a small brass plate bearing the following inscription:—"Henry Bullayen the sone of Sir Thomas Bullayen." Mr. C. stated that he had ascertained that it belonged to Hever Church, Kent, and that its original place (to which he intended to restore it) was close to the tomb of Sir Thomas Bolleyn, the father of Anne, Queen of Henry VIII. He expressed his inability to discover the relationship of the person here commemorated, as Sir Thomas does not appear to have had any son of that name. He presumed, judging from the size of the stone, the person must have been a child.

Mr. Price stated that in the neighbouring church of Penshurst there is a similar small brass cross and inscription plate to the memory of "Thomas Bullayen, the sone of Sir Thomas Bullayen;" and that probably, from neither of them being mentioned in the Bolleyn pedigree, they both died in their infancy. He had no doubt they were the brothers of the ill-fated queen. Mr. Price added that the Hever brass had been stolen years ago, and he rejoiced to find that at the least some portion of it was in existence, and likely to be restored to its proper place.

Dr. Jessop forwarded for exhibition a brass seal, bearing two matrices: the smaller one represents the head of a bull, the other the same emblem, with a legend of a very curious character, and which forms the subject of a paper displaying antiquarian and philological research. Mr. Price furnished a brief abstract, observing that, although the seal was probably not older than the fifteenth century, the legend was doubtless copied from some antique gem or amulet, and judging from its resemblance to some of the mystic legends and doctrines of the Gnostics, was referable to a very early period of the Christian era. The inscription is as follows:—"+ℵ TO ONℵ ℵI CION OOIЄ," which Dr. J., reading it SERAPIS TO ONOMA AI ΣION (the last four letters being merely a vocalic exclamation), interprets "Serapis, the great name ever divine, O hail!" The inscription commences with the first and last letters of the Hebrew alphabet, the cross being the ancient form of the *tau*. These characters, from their extreme position, were thought symbolical of the whole compass of language, and expressive of universality. The word *aleph* means captain or leader, also a bull. *Tau* is a limit or boundary, and from its form was considered by the Egyptians as typical of horns. In describing at some length the various modifications of the cross, Dr. J. remarks, that at the destruction of the temple of Serapis (the bull-headed deity of the Egyptians), certain cruciform characters were found engraven on stones. These, both Christians and idolators claimed as symbols of their respective creeds. Traces of this emblem have been discovered in the ruins of Nineveh (*vide* Layard), and they abound in the sculptures of Egypt. The Gnostics blended some of the superstitions of Egypt with their mysteries. They adopted the bull, or its head, as an emblem of Christ.

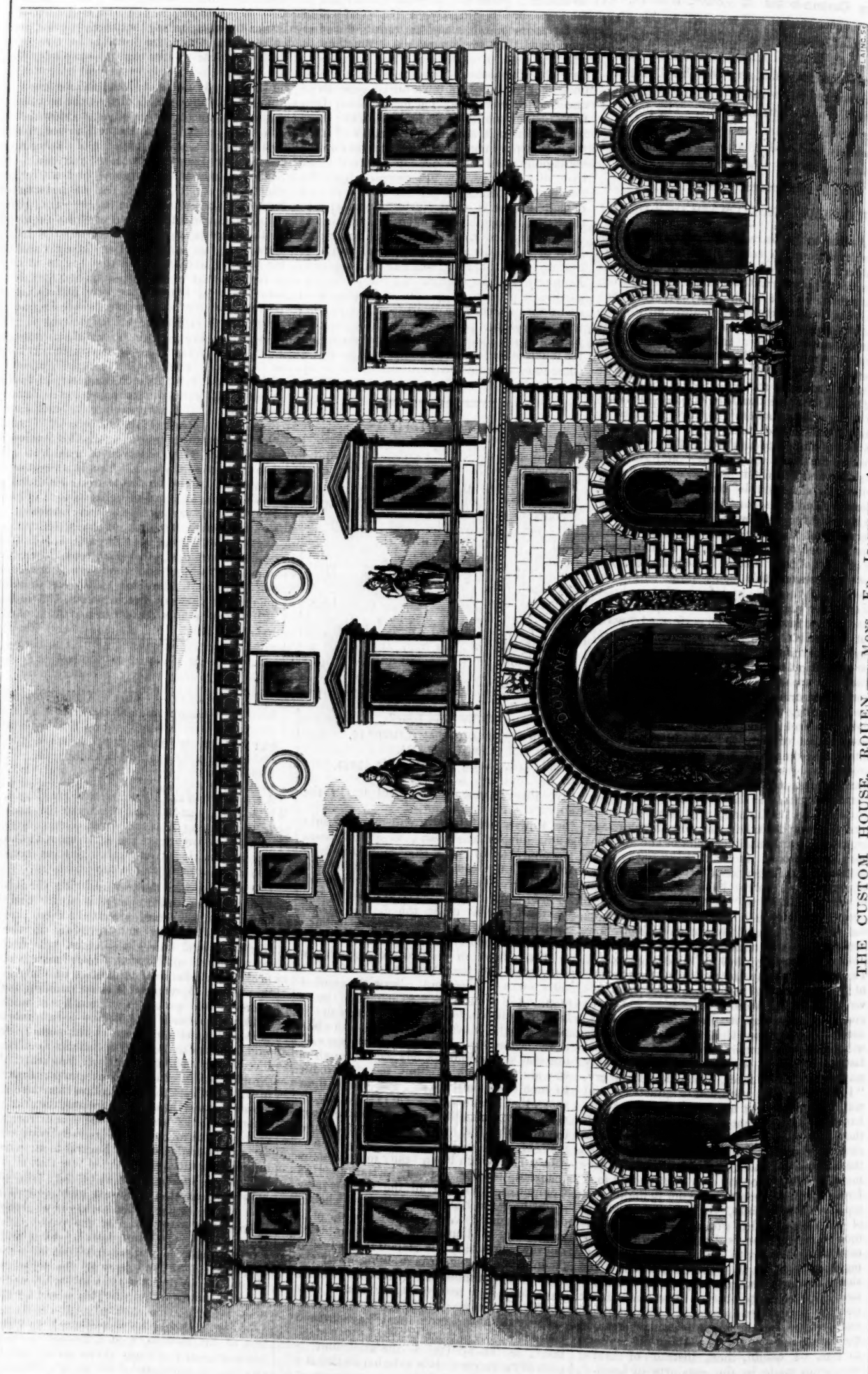
RATING ST. MARY'S, WHITECHAPEL.

FIXTURES AND FIXED MACHINES.

A MEETING of the parishioners of St. Mary's, Whitechapel, was held last week, for the purpose of receiving a report from a committee appointed to investigate the question as to the rating of machinery and other fixtures connected with property within the parish.

The report stated that, considering the importance of the matters submitted for their consideration, they had prepared a case, and submitted it to the consideration of the Attorney-General and Mr. Bodkin, who had given it as their opinion that *all fixed machines, as well as all fixtures*, in houses and shops within the parish, were liable to be rated for the support of the poor. The committee were therefore of opinion that all the parish rates raised under the authority of the local Act should be levied in terms of that finding,—that the vestry should, by means of committees, carry out the assessment of the parish under that system of rating,—and that notice should be given to the Middlesex magistrates and the property-tax commissioners of the change which had taken place in consequence of adopting the system recommended in the opinion referred to.

The report having been received, it was further resolved that as a just and equitable assessment could not be made without a survey of all the rateable property in the parish, including machinery, and fixtures in shops and dwelling-houses, competent professional surveyors be appointed to survey all the property in the parish, so that the rates might be made on a sound and legal basis. This would be all very well if other parishes adopted the same course, but it should be remembered, so long as this is not the case, that inasmuch as the police and other taxes are taken on the same rating, the inhabitants of St. Mary's, Whitechapel, will have to pay a larger proportion of these latter than their neighbours.



THE CUSTOM HOUSE, ROUEN.—Messrs. Ed. Isabelle, Architect.

THE CUSTOM-HOUSE, ROUEN.

The Custom-house at Rouen, situated, as some of our readers will recollect, on the quay, towards the south, was built from the designs of Mons. Edouard Isabelle, of Paris. It was commenced in 1835, and completed in 1848. The annexed engraving is a geometrical representation of the entrance front. The doorway is a striking feature, and the rustication exceedingly bold and effective. The sculptured figures are about 8 feet high.

WHAT SHALL WE DO WITH OUR DEAD?

As it is to be feared lest the *retreat* of the pestilence from the country should be the signal for the retreat of all thoughts of the odious practice of burying in towns and churches from the public mind, it is the duty of every one that has the opportunity to endeavour to *keep the attention* of the public so fixed upon this subject, as to insure a reformation. Now, it appears to me that we have not made sufficient use of *antiquity* in this matter, for had we glanced backward at the practice of our forefathers, I think we should not have had reason to deplore the existence (in our midst) of so many "consecrated cesspools." The politest nations of antiquity had two distinct modes of treating the dead, viz., burning and embalming, the first of which was practised by the refined Greeks, and by them imparted to the Romans; and the second was and is, I believe, to this day the custom of the Egyptian, the Persian, and the Jew. We also note another circumstance, which is, that the Romans, who at one part of their history buried the dead, had laws to prevent this being done within the precincts of the city; and from what we know of the other nations, the rites of sepulture appear to have invariably been performed "without the walls." We cannot, therefore, find anything in antiquity to act as a precedent to *our* present practice. In this the ancients were wiser than are we. They *saw* the evils arising from intramural burial, and recognized from the beginning, what we have at last *felt*, that there is a bad air engendered by the decomposed bodies of the dead, which, if enclosed within the circumscribed space of a city burial-ground, will possess sufficient malignity to induce disease; and therefore it was that they burned or buried their dead in the *open* country. At last having, as I have said, *felt* this, we know it to be true, and therefore are beginning to cry out for cemeteries and country burials, and would place the bodies of the dead in the ground, amid country scenes and air, where the gases might have space enough so to disseminate as to lose their death-giving pungency. This is a decided improvement in the feelings of our countrymen, and will doubtless lead to much that is good in the *practice* of burying; but for my own part, Sir, I cannot see why the more wholesome practice of burning the dead should not be again revived: indeed it would be a hard matter to give any reason why it should have been discontinued. I know that the above *sentence* will meet with much opposition from the fastidious, who, with abhorrence strongly marked in their faces, will doubtless cry, "How shockingly inhuman a practice," and will, *sans doute*, set me down as a great barbarian for saying that I like it. Let me ask them, however, why it is that they prefer the element of earth to that of fire? Is it because the latter is so quick and *clean* in its destructions? Verily, I, for my own part, should look forward with far more pleasant thoughts to a sepulture amid flames, than to a spot in any of our over-crowded grounds, and would as soon commit a friend's dead body to the quick consuming element of fire, as to the mouldering element of earth, with its attendant, the slowly-devouring worm. Aye; and I will say *sooner*, for let it be observed that in the latter case my dead *friend* might, if I lived near his resting-place, be the *death of me*, whereas, in the former there could be nothing of this kind to fear. I would, then, instead of having cemeteries made in the outskirts of London, which, look you, *may* in time become *intramural*, and *must* at any rate soon surround with the circle of death the habitations of the living—light up once more the funeral torch, and again kindle the funeral pile, and would do this in a place set apart for the purpose in the *country*. By this means the dead would be far more speedily and *healthily* reduced to *ashes* than they at present are. Whether we alter our *mode* of sepulture or not, we must at once alter the *places*. Town burials must be at once abolished, and all town burial-grounds at once and for ever closed. The mere closing them from further additions is not sufficient; there has been enough added this summer of itself to breed a pestilence next. Cholera may not be contagious amid the living, but I should think that, of all things, the gas escaping from the decomposed bodies of persons that have died of that disease is most likely to impart it to the living who imbibe it. To prevent this, it is necessary first to give our burial-grounds a layer of some disinfecting material, and after that to cover it with concrete or asphalte. Economy *must* be thought of; but let no niggardliness prevent the people of London from doing that which may avert from us another visitation of the pestilence, which is now departing; and, moreover, it will not do to pay too much attention to the interests of the few,—these must succumb to the health of the many.

Le Feu.

RAILWAY JOTTINGS.

A wooden station, of a wretched description, it is said, has been provided by the North Midland Company for Bingley, a town containing 7,000 inhabitants. "It consists, says a contemporary, "of a clerk's room, about three yards square at one end, a small open shed in the middle, and at the other end a room similar to the clerk's, dignified with the name of the 'Ladies' waiting-room.' During wet weather the clerks transact business with umbrellas over their heads, to protect themselves from the rain dropping through the roof. In the open shed are huddled together 1st, 2nd, and 3rd class male and female passengers, sometimes for nearly an hour, exposed to all kinds of weather. 'The Ladies' waiting-room' is avoided from the dread of cholera, for the stench arising from the conveniences, only separated by thin boards, is dreadful." The era of railway *economy* seems to be superseding that of *extravagance* with a vengeance—all allowance here, for probable exaggeration, to the contrary, notwithstanding.——A more excusable instance, it may be, of real economy appears in the reduction of salary effected in the appointment of a traffic manager on the York and North Midland, at 300*l.* a-year, in place of Mr. Hudson's *élève* at 1,200*l.* There were 137 applicants for the reduced rate of income.——We regret to learn that the scheme for removing the Chinese Exhibition by rail to Edinburgh, already described, was not altogether successful,—indeed, an alleged, but, we should think, somewhat over-estimated damage, to the extent of 1,500*l.* to 2,000*l.*, was occasioned by the striking of two of the vans on a bridge near Berwick, and the crushing of their contents thereby. The rails had been altered, too, so as to allow of the train passing right under the crown of the arch, but it was scarcely to be expected that vans of so unusual a size should safely pass through railway arches, which are but too often reduced to such close cutting and dangerous dimensions, that a railway guard himself often dares not stretch his neck even a very little beyond the breadth of his train without the imminent risk of having his brains dashed out—a catastrophe which has actually more than once occurred.——The Railway Clearing House Committee, at which all the leading railway companies are represented by their chairman or other delegate, have, it appears, at the suggestion of Capt. Huish, urged upon the railway companies the importance of giving facilities for the guards walking safely along trains when in motion, by which means, as we have long and perseveringly pointed out, a great variety of accidents may be averted. The Railway Commissioners, in 1847, themselves adopted it, out of a multitude of other suggestions, as the system of communication best promising success. It is to be hoped that it will now be generally carried out. In the event of a carriage or truck catching fire, of an axle heating, a door flying open, a cry of help from a carriage, from whatever cause arising, or in any case where there may be even a suspicion that something is wrong, the guard should be able to get to any part of a train at once.—— It has been suggested that there is great need of accommodation for invalids in a reclined position, while on the way to hospitals, &c., for medical assistance, or surgical operation as on fractured limbs. Even independent of humanity as an object, doubtless the additional traffic in transfer of invalids, to towns not otherwise reachable for medical advice, would well repay all the little expense of fitting up a carriage or two for such a purpose. On American lines there are sofas, or seats for reclining on, even for the use of passengers limb-free, and in perfect health.——The general specification lately issued of stores required by the London and North-Western for 1850, shews the vast amount of materials required for working the traffic of this the most important railway in the world. The "specification" extends over 25 pages of foolscap, and particularizes the stations at which the required amounts of stores are to be delivered. Of "brass and brass work" 352 cwt. of castings are required; 144 gross of screws and 59 tons of locomotive tubes. Of "copper" 8,960lb. of bolts from ½ to 1½ inch diameter, 11,200lb. of sheet of various thicknesses and dimensions, and 12,768lb. for fire-boxes ¾ and ½ inch thick. Of "coal" 18,104 tons. Of "crucibles for moulding brass," 2,539. Of "colours, dry-saltery," 110,000 leaves of gold leaf. Of "iron and iron-works," 35 tons of axle-guards, 50 tons of patent shaft bar-iron, 190 tons of fire bar-iron, 42½ tons of bolts, 13 tons of nuts, 102 tons of castings, 48 tons Lowmoor or Bowling iron, 100 cwt. of nails, 69 cwt. of rivets, 6,360 gross of screws, 1,343 tons Staffordshire iron, and 120 tons Yorkshire iron. Of "timber and wood work," the Company require tenders for 19,367 feet of alder planks, 145 loads of beech planks, 10,000 feet of baywood boards, 91,000 feet of deal boards, &c.

NOTES IN THE PROVINCES.

St. Michael's Church, Cambridge, has been considerably injured by fire. The congregation were assembling on Sunday morning last, when smoke was observed to be issuing from the roof on the south side. The building was speedily vacated, and the fire broke forth through the slates and raged with great fury. The gownsmen acted *like men* at the buckets and engines, and the destruction was at length arrested. The roof was totally destroyed. Some damage was also done to the organ in removing the pipes and by the play of the engines. Nearly 1,000*l.*, it is estimated, will be necessary for repairs. The building is not insured, but there is a small fund for repairs, though much exhausted of late. The accident is attributed to negligence in repairing flues and stoves.——A new church has been erected at Newgate-street hamlet, Hatfield, at the expense of Mr. Mills, of Tolmers. It is called St. Mary's, and is a small building in the Pointed style, without pews, and has a stained-glass window over a gallery.——In removing some old panelling at the south end of Norwich Grammar School, a piscina has been discovered. The style is Early English. Mr. Ninham, of Norwich, has executed a drawing of it. The work of purification has also disclosed several heads and foliage, &c., in the capitals of the arches.——The new corn exchange to be erected at Brigg, was contracted for on Thursday week. Several tenders were offered, but the one accepted was that of Mr. Margisson, builder, Hull, at 1,227*l.*: difference between highest and lowest offer, some 320*l.* The site selected is at the back of the "Angel" inn.——On 24th ult., the parish church of St. Candida, of Whitechurch Canonicorum, Dorset, was reopened, after having undergone extensive repair and restoration, under the direction of Mr. Butler, of Chichester, including the rebuilding of the north aisle, roofed with English oak covered with lead, and affording 100 additional sittings, the restoration of the stonework and tracery of twenty windows, some of large dimensions, and the erection of additional sittings in solid oak. The old seating has been reduced in height, and the seats throughout are open. Amongst

the decorative restorations are the removal of plaster and whitewash from an open oak roof of fifteenth century, ornamented with moulded ribs and bosses, painted in red and yellow; the introduction of Powell's quarries in eastern triplet of chancel, the floor of which is decorated with encaustic tiles from Messrs. Chamberlain's manufactory, Worcester. The altar step consists of veined Devonshire marble, surrounding encaustic tiling. The reredos is formed of carved oak panelling of great antiquity, brought from Rouen, gilt and painted. The walls of sanctuary are powdered with golden stars and fleur-de-lys, and the roof is covered with white and vermilion painting, in imitation of fan tracery on a blue ground with golden stars at intervals, — a design copied from chapter house of Exeter Cathedral. The windows throughout the church are stencilled in patterns, from ancient models, in imitation of flowered quarries. The original circular semi-Norman font, with column and base of Purbeck marble, had been removed and broken, but now stands restored near principal entrance. —— In addition to the fortifications lately completed at Bovisand, Picklecombe-point, and Drake's Island, as defences for Stonehouse harbour, a new fort has been erected just above the site of the old Long-room Barracks, at the Victualling-yard point, which will render complete the defence of the Sound and the entrance to Hamoaze. The new building is called "The Prince of Wales' Redoubt," The external walls, towards the land, are 7 feet thick, and musket proof, and, instead of being built up perpendicularly from the ditch, are curved. On the sea-side the walls are 8 feet thick, and considered to be bomb-proof. The fort has been two years in erection, and the total cost will be about 15,000*l*. It is constructed principally of dressed lime-stone. The cheeks of the embrasures, piers of entrance-gates, and other parts, are of dressed granite. Mr. George Roach, of Plymouth, is the contractor, and the work has proceeded under the inspection of Mr. Frederick Burgoyne, Government foreman of works.—— Improvements have been made in Ramsey, Isle of Man, by the extension of the quay inwards 100 yards, to accommodate wind-bound vessels. —— On Wednesday week, Trinity Church, Runcorn, after having been beautified and enlarged, was re-opened. A chancel and a stained-glass window have been presented by Sir R. Brooke, Bart.——The laying of first stone of bridge over lake at Welbeck Abbey took place on Thursday week. The arch is of iron, with iron battlements upon stone buttresses. The building is undertaken by Mr. Bell. The first stone was laid by Viscountess Shannon: present, the Duke of Portland and others.——At a meeting of the Ashton guardians on Thursday last, the building committee recommended that the amount to be expended on their new workhouse be fixed prior to advertising for plans, and that the board employ the architect to carry out his plans at the rate of 5 per cent. on the outlay: no premium for second best. They recommended that the sum to be expended be limited to 6,000*l*. Mr. Ousey cunningly suggested that it would be better to give a premium for the plans; "they would be able to manage the erection quite as economically as though the architect were employed to carry out his own plans." Resolution to that effect lost by a majority of one. Agreed that the sum be 6,000*l*.——Notice has been given of an application to Parliament, by the Carlisle corporation, to take possession of the gas works there, and to work them for the benefit of the city. The Bill, says the local journal, will most likely pass without opposition, and it will undoubtedly confer a benefit on the inhabitants of Carlisle.——The town councils of Dumfries and Maxwelltown are to bring a Bill into Parliament authorizing a supply of water from Lochrutton. Mr. Gale, of Glasgow, was elected engineer, and Mr. Newall, local engineer.—— The new schools at Elson, near Gosport, were opened on Thursday last, on which occasion full service was performed at the church, and the new organ was played for the first time. The schools and master's house cost rather more than 500*l*. in building, and will afford room for 130 children. The parsonage-house will shortly be commenced. The architect is Mr. John Colson, who also designed the case for the organ.

SPANISH TOWN CATHEDRAL, JAMAICA.

We inserted a communication from a correspondent in August last (p. 377), headed, "Architects and Architecture in Jamaica," setting forth that a gentleman who came to the island as an organist, music-master, &c., not finding his success so great as was anticipated, had turned architect and civil engineer, and was engaged in erecting a chancel to the cathedral church. It further said, "it has now leaked out that our architect has been, and still is, extracting from the pockets of the builder either 5 or 7½ per cent., besides the commission he receives from the parish." In reply to this we have received a letter (previously addressed to us in the *Jamaica Despatch*), signed "J. Calvert, superintending architect of the cathedral, Jamaica," enclosing a declaration signed, "Richard Cowan, sole contractor for the masonry; James Campbell, sole contractor for carpenter's and joiner's work; James Jones, carpenter; and Joseph Waldron, builder;" denying that the architect has ever demanded, or received from them, any commission or allowance. Mr. Calvert says:— "One could scarcely believe your correspondent had read Vitruvius's requisites for an architect, or he would remember he says, among other things, he should be '*a musician*' —'the head and front of my offending.' When the immortal astronomer Herschel could no longer eke out an existence as a poor *organist and musician*, did his knowledge of that heavenly art, music, render him blind to the glorious harmony of the starry world?

I sent in designs in competition with the whole island, without friendship or favour, and regret I had no assistance whatever, as he insinuates I had. The building is nearly up to the roof, and is about 50 feet long by 50 feet wide, with side aisles and clerestory windows, on moulded arches and clustered columns, with carved stone corbel angels supporting an elaborately carved roof. The whole on a foundation of great strength, 15 feet deep, and I trust will stand when my enemies are forgotten, and I a 'musician' in the choir above.

I refer you to the declaration, in denial of the assertion of my 'extortion,' and wish you could but enjoy with me a few days superintendence of negro workmen, on a building in Jamaica, with the pleasant warmth of a mid-day sun at least 107 degrees Fahrenheit; you would find, without any clerk of the works, 5 per cent. on an average expenditure of 20*l*. a-week, a splendid remuneration for the entire occupation of your utmost exertions, and I doubt not would soon grow fat, and become the envy of every hungry architect, as is supposed to be—Your humble servant."

By the same mail we received a statement from our former correspondent, containing the grounds of his assertion, but we cannot give place to it in the face of the rigorously worded declaration referred to.

DESIGN IN MANUFACTURE.

Justly does your correspondent, "C. E. M.," in a late number of your journal, condemn the prodigious floral ornamentation of the various articles in the Birmingham exhibition, executed as like unto nature as their various materials will permit. This error, arising from an imperfect education in art, and an injudicious striving after novelty, is the evident characteristic of the so-called "art-manufactures" of the day. It requires but little study, and less design, to copy the first plant that comes to hand, without adaptation, whether suitable or not to the purpose required. It is the work of a mechanic, and not of an artist, and elevated but in the degree of execution above that of the savage in the South Sea Islands, to carve the handle of a knife into the semblance of a spike of maize, and when the noble task has been accomplished, the implement is but rendered perfectly unfit for its purpose. I remember not long since to have seen engraved with commendation a "high art" salt-cellar, which reflected no great credit on its compiler (for design it cannot be called), as it consisted merely of a sea-shell reversed and mounted upon a piece of coral. Too often is practical utility disregarded, and all purity of outline lost in an unpruned luxuriance of foliage. Nor is it only with botanical specimens that every domestic utensil is bedizened, under the mistaken idea of ornament; but the human figure and animals, executed in the worst style, are crowded into every possible position, as if no opportunity of degrading them should be lost. It does not seem to be generally understood, that art is a conventional treatment of nature, and not a literal imitation of her forms; for while she must be foiled if she attempt to rival their delicacy and compete on the same ground, yet there is a character and dignity of her own with which she may invest them,—an impress of thought which should be stamped upon the types of her choice.

It is to be hoped, then, that this botanical fever will soon subside, or at least cease to be preached to the people as the noblest realization of "high art." J. P. Seddon.

MASTERS AND WORKMEN.

In a recent case the defendant, Mr. Brass, a builder in the city, was sued in the Sheriff's Court by four of his workmen (carpenters) named Lockyer, Goddard, Payne, and Thomas, under the following circumstances:—

The plaintiffs stated that they were discharged on the Saturday, and being unable to get their tools they went for them on the Monday morning; they accordingly claimed a quarter of a day's wages for fetching them, and a quarter of a day for grinding them—the latter being a custom adopted throughout the trade. They also contended that Mr. Brass had no right to discharge them, as they were taken on by his foreman, who said it was his own job.

The plaintiff said he resisted this claim entirely on principle. He discharged the plaintiffs for neglect of duty. They left off at four o'clock, and were paid their full wages up to half-past five; they had ample time, therefore, to collect their tools.

His Honour said, although the foreman might be authorized, as the agent, to take on workmen, that did not take away the right of the master to discharge them; and with regard to the sum claimed for grinding tools, although such a principle might exist in some instances, there was no such custom in law. The plaintiffs must therefore be nonsuited.

EXPOSITION OF FRENCH INDUSTRIAL ART.

No. 13, George-street, Hanover-square, with its adjacent premises, contains at this moment a beautiful and costly exposition of French industrial art, sufficient to make our manufacturers tremble for the probable expatriation of some of the prizes proposed to be given in 1851. Mons. Sallandrouze de Lamornaix, a manufacturer of distinguished position in France, projected and arranged this exhibition with the view of showing the English manufacturers who their opponents will be.

Tapestry, china, oak carvings, bronzes, carpets, are amongst the works exhibited, and will demand our notice. We would merely remark now, to those who would institute comparisons with works at home, that the price, and the circumstances under which many of these extraordinary things were manufactured, should not be left out of view. They must not, for example, ask where we can parallel that magnificent piece of *Gobelin's* tapestry, presenting an incident in the life of Gustavus Vasa, if we mistake not, or the large flower-painted vase in the centre,—without remembering that the price put on the latter is six hundred pounds—the price of the first, *four thousand pounds*, and that Government took the risk of their production.

The "Sainte Chapelle," Paris.—During the last week an immense crowd has assembled day after day at the Palais de Justice, to view the restored decorations of the *Sainte Chapelle*. From ten in the morning till four in the afternoon they were slowly passing in, ranged in files, each in the order of arrival. From 3,000 to 4,000 persons daily have had admittance. On Sunday last the President, in another chamber of the building, distributed the prizes awarded at the late Exposition.

METROPOLITAN COMMISSION OF SEWERS.

WHEN the court determined that the business should be examined and arranged by the general committee, previous to each meeting, so that "any discussion which was necessary for the information of the public would take place in court," or rather as they ought to have said, "so that no discussion necessary for the information of the public may take place in court;" we saw what would be the result, and pointed it out.

To say that the commission hold an open court now is not true: the public meeting is simply *pro formâ*, a blind and a pretence, and without assuming that any but the most careful and intelligent management is being pursued, we at once formally protest against the system as being full of evils, and certain to lead to an unsatisfactory state of things.

At a meeting held on the 9th, Lord Ebrington in the chair, and other commissioners present, the following resolutions were passed without discussion:—

"1. That it appears that the plan submitted by Mr. Cubitt to the Commissioners for Westminster in November, 1847, and on the recommendation of their surveyor, Mr. Phillips, approved by them, which provided an escape for the sewage through the outfall there shown into St. George's sewer, was not executed. That the officers of the commissioners charged with the superintendence of the work allowed the said plan to be materially deviated from; that they allowed the sewer to be blocked up with a wall, in what was there described as the direction of its outfall, and an outfall to be opened into Warwick-street sewer, where none was described in the said plan. That for these alterations and deviations no authority is to be found in the records of the court.

"2. That the best thanks of the court be given to Professor Lyon Playfair, for his very valuable services, rendered gratuitously to the commissioners, in the chemical examination he made, with so much skill and judgment, in reference to the lamentable accident that occurred in the sewer in Kenilworth-street.

"3. That though the commissioners have not sanctioned, and do not sanction, the application made to Dr. Ure for his opinion on the subject of the accident in the Kenilworth-street sewer, Pimlico, yet, as it appears that one of their officers did, during the interval which elapsed between the termination of the old commission and the first meeting of the present, apply to him and request a chemical examination of the contents of the sewer, they, under the circumstances, will not object to pay Dr. Ure some reasonable remuneration for this first analysis so requested by their officer on his own responsibility.

"4. That the commissioners be summoned, and the city commissioners be requested to attend the next court, for the purpose of taking into consideration the plans sent in for the drainage of the metropolis."

Adjourned to Friday, the 23rd.

Miscellanea.

EFFECT OF BAD DRAINAGE.—The verdict given by the juries of the coroner's inquests held on recent cases of cholera in Hertford County Gaol, attributed the ravages of the epidemic to the total want of drainage, and requested the coroner to write to the visiting magistrates, drawing their attention to the subject. It appears that the soil-drains connected with the gaol run into two large close cesspools, one of which is within and the other without the walls, and that the prisoners are exposed to the injurious effects of the noxious gases generated in those cesspools. The coroner, therefore, in compliance with the wish of the jury, drew the attention of the visiting magistrates to these facts, and suggested that the cesspools should be done away with, and a proper system of sewerage established. We had the impression that a large sum of money had been spent here recently in putting things right.

SHEET METALS.—Mr. T. D. Jackson, of Brooklyn, New York, has patented an improvement in alloys for sheet metals, consisting of—Copper, 64 oz., zinc, 22 to 26 oz., India tin, 1 to 4 oz. The inventor claims as his invention or discovery, "the application of the manipulations employed for compounding an alloy of metals in the proportions and of the materials mentioned for a new sheet metal, which shall be capable of being wrought in the cutting press, with dies," &c.

PROJECTED WORKS.—Advertisements have been issued for tenders, by 3rd December, for the works required in construction of a quay and sidings near Arundel, for the London, Brighton, and South Coast Railway; by 11th December, for the erection of a new savings bank at Witham; by 12th December, for the erection of a new pauper lunatic asylum, for 250 patients, at Bracebridge, near Lincoln; by 3rd December, for the construction of two reservoirs near Langley, Prestbury, with other works connected therewith,—also a filter bed and service reservoir,—and for laying about 2¼ miles of pipes, all for the Macclesfield borough water-works; by 24th inst., for gas fittings in the Brentford Town-hall; by 27th inst., for 200 tons of Barlow's patent wrought iron rail, for the Midland Railway Company; by a date not specified, for the erection of some small houses at Itchen (Southampton); by 21st, for a supply of British iron for the East-India Company; and by 18th December, for a supply of pumps and water closets for the navy.

DRAINAGE OF TOWNS ON TIDAL RIVERS.—A suggestion for the drainage of London has been made to us by Professor Hann, on the part of Mr. Goldsworthy Gurney. "The current of the Thames, in round numbers, at London-bridge," he remarks, "runs down 7 hours and up only 5 every tide; in winter more, in summer less, depending on the amount of river water. It runs at a rate of about from 5 to 7 miles per hour (no matter what the speed; let us suppose it to run at the same rate up and down for our present purpose). It is plain that anything thrown into, and forming part of the Thames at *high* water, would, in seven hours, be carried more than 40 miles down the river. On the return of tide, in five hours, the full time of flow, it will only have come up 30 miles, and at the time of high water would be 12 miles below the bridge. The next ebb would carry it 42 miles further down the river, or 54 miles below London-bridge. At the return of next high water it would be left 24 miles down the river, thus descending 24 miles in 24 hours, until it went clear into the sea. If, on the contrary, anything be thrown in at *low* water, it will go *up* with the tide for five hours, be five hours more in returning to the same spot, have only two hours ebb before it meet the flood coming up, and of course would return with it, go again up the river, and be seen probably every day for a week." Mr. Gurney suggests, therefore, that the sewage of London be collected, and only allowed to run into the Thames at high water, so that it may be at once got rid of. All this, however, is not quite so clear as it looks.

VENTILATED SEWERS, CHESTER.—I observe, at page 482, of your journal, that Mr. Thorpe, of Hull, states that he has adopted the plan of connecting the rain-water spouts in the fronts of the houses in that town with the sewers, for the purpose of ventilating them. I beg to state that system has been adopted at Chester for some years, and that I suggested it nearly three years ago in the pages of your journal. Although probably not so effective in its nature as Dr. Gurney's steam jet, it is a simple expedient, inexpensive and effectual in its operation. At the heads of our sewers, when we have what is termed dead ends, I have had vertical shafts or manholes carried up, for the purpose of securing self-acting flushing tanks, in principle resembling Hosmer's, and I purpose obtaining a supply of water from the main, so that whether the supply of water be constant or intermittent (as it is in this case), the sewers will be regularly and effectually flushed at stated intervals. When the flushing apparatus is complete, I connect the shafts with pipes to the fronts of houses, so that when in action, the regular downward current of the flushing waters will create an upward current of what little foul gas may be generated in the sewers; so that it will pass off through the ventilating shaft at the head of the sewer, and be disseminated in the atmosphere.

BAYLIS.

TESTIMONIAL TO MR. CUBITT.—Mr. G. R. Ward has been selected by the committee to engrave, for distribution to the subscribers, Mr. Pickersgill's excellent and life-like portrait of Mr. Thomas Cubitt. It is to be executed in the mixed style, and finished in June next.

THE SAMARITAN SOCIETY OF ENGLAND.—This society, which originated in a paragraph published last year in our paper, proposes to establish cheap lodging-houses and dormitories for the necessitous poor under the arches of the metropolitan railway viaducts, open to all, at all seasons. "The arches in each district will be formed into first, second, and third class compartments for men; first and second for women. These tenements will be warmed with hot water, lighted with gas, be well ventilated, and be placed under the supervision of the police. The first class will be furnished with iron bedsteads, flock mattrasses, blankets, &c., and the charge will be 2d. per night, or 1s. per week. The second class will be fitted up with slanting boards, such as are used by soldiers in their guard-rooms, with pillows and warm rugs; and the charge will be 1d. per night. The third class will be merely furnished with clean straw, and will be accessible to all, at all times of the night, without charge. These will be opened only in the winter. Five arches will at first be rented in each district. The centre arch will be furnished with a boiler, and will be used as a lavatory. The two arches on either side will be converted into first and second class wards,—those on the right for men—on the left for women; and each tenement will shelter 30 individuals. Each district will thus furnish 120 beds; and it is confidently expected that they will be self-supporting when once established." The society have views beyond this, such as opening schools in the day time, and to assist in reclaiming prisoners, but these are less immediately practicable. As the winter is approaching, now is the time to begin the work. Plans, we understand, have been prepared; and it is estimated that each arch may be fitted up for about 60*l*. Rightly managed, this society may do an immense amount of good at small cost.

SURVEYOR'S TENDERS: ISLEWORTH ASSESSMENT.—I frequently see in your paper the heading "Blind Builders." There are, however, other men who are sometimes equally blind. As a professional man, I cannot account for such discrepancies. In this parish (Isleworth) we have 3,128 acres of land, varying in rental value from 2s. 6d. an acre to 10*l*. 10s. an acre, and including about 1,500 houses. It has been determined to have a re-assessment. Advertisements have appeared from the board of guardians for making such re-assessment, and fourteen tenders have been sent in. You must excuse my not giving you the names of the different candidates; the lowest, however, is 50*l*., and the highest 420*l*. Such things are monstrous. I cannot think either Cocker or Columbine can have been consulted.—W. A.

SHOP DOOR BOLTS.—With reference to the circumstance that a watchmaker was robbed of two watches a few days ago by a pretended customer, who darted out of the shop with the property while he turned his back to get other goods to show him, a correspondent suggests the use of a sort of double night bolt, which may, by the application of ordinary bellhanging work, be made to drop down from over the double inside doors when shut (or a single bolt for one door) of any shop where small valuables are sold, at the will of the person behind the counter, and altogether unseen by the party presenting themselves, and thus effectually prevent the escape of any one with the goods.

INSTITUTION OF CIVIL ENGINEERS.—In accordance with a new arrangement, the session of the institution commenced on Tuesday evening last—Mr. Joshua Field, president, in the chair—instead of, as heretofore, in the middle of January. The paper read was a "Description of the Coffer-dam at the Grimsby Docks," by Mr. Charles Neate. The length of the coffer-dam was 1,500 feet, supporting at high water a head of water of 25 feet, whilst the excavation behind it was carried to 11 feet below low-water. The form of the dam was that of a circular curve, with a versed sine of 200 feet, or nearly one-fifth of the span.

THE ROYAL PAVILION AT BRIGHTON.—It is understood that the Pavilion at Brighton has been purchased for a sum nearly amounting to 60,000*l*. The valuables of the interior have been removed, and it is expected that the place will be converted into purposes for the improvement of the town.

LEEDS MECHANICS' INSTITUTE. — The annual festival of this institution was held on Friday last in the Stock Exchange; Lord Mahon in the chair. His lordship made a fluent and interesting speech. In course of it he with truth said, that if it be true that knowledge is power, it is not less true that knowledge is pleasure,—pleasure with no bounds or limits on this earth. The boundlessness of knowledge his lordship aptly illustrated by the discoveries of the telescope, on the one hand, and the microscope, on the other. Our discoveries seem only limited in depth, if not in breadth, by the imperfection of the instruments we yet use; the extreme limit is probably almost as far removed as ever. But depend on it, he said, that pleasure is not to be found in mere superficial acquirements. Yet of this I am persuaded, that there was great truth in the remark I once heard from that accomplished and experienced man Prince Talleyrand:—"Depend on it there is no such thing as labour lost. Depend on it, whatever branch of study you pursue, and however recondite or remote its utility may seem, a time may come, and when you least expect it, that you will derive practical advantage from it, and see the good effects of having turned your minds to it." His Lordship's speech was followed by the proposal and adoption of various resolutions in favour of the objects of such institutions, and among which was one by Mr. R. M. Milnes, M. P., to the effect, that "To impart a taste for artistic beauty, and to give familiarity with the principles on which it rests, should be one of the objects of popular education." Mr. Roebuck wound up the eloquence already expended with no less eloquence of his own. "All the great advances of knowledge," he remarked, in one part of his speech, "have not been done by the leisure class, but by the labouring, working for their livelihood, and bringing habits of industry to the acquirement of knowledge; using those stern habits in the race with the *dilettanti*, pressing upon and outstripping him, because the latter is as dilatory in his modes of pursuing knowledge as in his habits of pleasure. .....An institution like this makes us all entertain right notions of true equality; it teaches us to have those sympathies which nature intended, and which you have always felt vehemently; it makes us all understand each other as *true men;* it is the bond of knowledge—the tie which shall unite us to each other.....As this is a mechanics' institution, I hope that it will be the means of doing what it does not at present—of bringing the artisan amongst us, and introducing a close alliance between all classes of society, without which there is no safety; and that we shall be with them in the brotherhood of knowledge and of feeling, and make this what it now calls itself, but which, I fear, it has not been—a mechanics' institute."

PUBLIC SLAUGHTER-HOUSES.—Mr. R. B. Grantham, whose work on the *Abattoirs* of France we noticed some time ago, has published a proposition for establishing public slaughter-houses in the principal towns of England. He submits that the butchers, and those interested in the connected trades, should unite, and erect, under an Act of Parliament, suitable buildings, with land sufficient for layerage and pasture, in a locality approved of by the local authorities. "They ought to be the undertakers," he says, "as most interested in the matter, and should take the lead, for they may depend upon it that the time is not far distant when these arrangements, or something very like them, will be carried out, and they will have to submit to the control of other persons, instead of keeping it in their own hands."

RAILWAY RATING.—In an appeal before the magistrates at Manchester against an assessment of about a mile of the South Junction line, belonging to the London and North-Western Company, it was stated for the respondents, that value of land prior to building on it was 62,787*l.*, and rateable value 2,960*l.*: present value of whole, 300,000*l.* The company proved the receipts for August and September last to have been 264*l.* 11s. 2d., and the working expenses 251*l.* 9s. 6d., leaving a profit of 13*l.* 1s. 8d., being at the rate of 78*l.* 10s. per annum. The magistrates, however, confirmed the rate. The appellants intimated an appeal to quarter sessions.

SHEFFIELD ATHENÆUM AND MECHANICS' INSTITUTE.—To the formal opening of this combined institution the Earl of Carlisle, Mr. Roebuck, M.P., and other celebrities, gave their countenance, those named personally, and others, such as Lord Mahon, by letter. The chairman, Mr. Alderman Dunn, explained the objects of the new establishment, which comprehends a news-room, coffee-room, and library, class-rooms, and hall for lectures, &c. The whole cost of the building, including site, has been 6,500*l.*, part of it not yet raised. The first stone was laid about two years since by Lord Arundel and Surrey. The Athenæum department was opened in the beginning of the present year, and the institution class-rooms on 1st October last. The pupils are now taught reading, writing, arithmetic, grammar, and geography, and other classes are to be opened. In speaking of the purposes of such an establishment, and while deprecating the idea that duty alone, apart from the memories of 'auld lang syne,' as in the present instance, should lead him to run about and foist his presence wherever there is a mechanics' institution or an Athenæum to be founded, Lord Carlisle remarked, with a quiet apology for what might be regarded as smelling a little of *his* shop—the Board of Health—that "it is not from the languid bed of sickness, from the troubled couch of fever, from the gloomy chambers of death that we can expect to derive hopeful votaries of intellectual and mental progress. The vigorous exercise of the judgment, the buoyant play of the fancy, the elastic impulses of the soul, require healthy and undiseased organs for their full display and development. The mind and body will almost in every case—though there are brilliant exceptions—be found to re-act upon each other, and those who promote the enlightened care of the physical health will most truly advance the use and enjoyment of the rational and moral faculties. The undrained alley, the unventilated room, the impure atmosphere, will but serve to irritate the tempers for which we trust here to provide serene enjoyment, and to clog and debase the energies for which we shall endeavour here to furnish fit opportunity and congenial nurture."

SOCIETY OF ARTS.—At the opening meeting, 7th November, Mr. W. Tooke, F.R.S., Vice-President, in the chair, Mr. Digby Wyatt read a voluminous report upon the Eleventh French Exposition, which has been published for public use. The report commenced by allusion to the attention paid by the French government to the development of the manufactures of that country by precept, example, public exhibition, &c., to the traditional excellence of early French productions, and to the modern restoration of that supereminence by the means before-mentioned, now persevered in with few interruptions for fifty years. Mr. Wyatt then gave a minute description of the building erected for the exhibition in 1849, which was situated on the Carré de Marigny, on the Champs Elysées. The estimated cost of the building was, in

		Total area. Metres.	Available area. Metres.
1839 about	£14,551	11,362	5,806
1844 „	15,056	19,497	9,051
1849 „	16,000	22,391	9,734

To the cost of this year must be added 2,000*l.* for the agricultural shed;—making the whole estimate about 18,000*l.* The cost of the building per square foot was, in

1839.....	2s. 2d.
1844.....	1s. 3½d.
1849.....	1s. 2⅝d.

The building had the defect of containing no one great hall, whereas on the occasion of distributing the prizes a great assemblage might take place. The writer believed that a better building might be erected in England at a less cost, probably by one-fourth. The gist of the report having previously appeared in the *Athenæum*, it came rather second-hand. On the 15th a paper was read by Mr. H. H. Russell on the "Construction of Suspension-bridges, with especial reference to a new mode of preventing Vibration."

ST. THOMAS'S CHURCH, NEWPORT.—We understand that there are about thirty sets of designs sent in for the re-building of St. Thomas's Church at Newport, Isle of Wight, which are on exhibition at the assembly-rooms there.

IRON.—A patent has been taken out at New York, by a Mr. M. S. Salter, for making hammered wrought-iron from the ore, by a single process, and within two hours! Can it be possible that we have here already an exemplification of the practicability of Mr. Mushet's heterodox prophecy against puddling? The cost of wrought-iron, it is said, will be less than half the usual cost, prepared on Mr. Salter's process. Anthracite is to be used under this patent.——Little business is doing in the iron trade. Prices were lately giving way, but appear to have since become a little firmer. It is declared, however, that "the minimum at which iron can be produced in Staffordshire has been already reached," and a withdrawal of capital is anticipated.

THE CHURCH AT SARAWAK, BORNEO.—The first beam of the first church (English) ever erected in this new dependency of the British empire was laid on 28th August last in presence of Sir James Brooke, the Rajah of Sarawak, and suite. The foundation sleeper was an enormously heavy block of iron-wood, which was slung into a trench by the Rajah. The work had then been for some time in progress, but there had been great difficulties to overcome in collecting, preparing, and carrying the heavy materials, and in levelling the hill for the site.

COLONNADES ARE "OUT."—The removal of the colonnade, forming the right-hand side of the outlet leading from High-street, Cheltenham, into the promenade, has been commenced, and in a few days the entire mass of building which rests upon it, and projects 10 or 12 feet into the street, will be brought down, and the houses thrown back to the Imperial-circus line of frontage. The colonnade was built thirty years ago, when such arrangements were in fashion.

THE READING ROOM AT DRURY-LANE THEATRE appears to be a considerable attraction, especially to foreigners, who have few opportunities in London to see the papers of their respective countries. Many appear to go to the theatre solely for this feature. We were glad to find THE BUILDER in request there when we looked in: and that it was being pondered amidst the learned beauties of "The Prophet," and the clash of the "Row" Polka.

PROPOSED PROVIDENT INSTITUTION FOR OPERATIVES.—We are glad to find that this suggestion is germinating. Professor Cockerell has addressed a strong letter on the subject to "The Builders' Society," urging them to move immediately in the matter, and we have reason to believe it will receive the attention due to it, and that the builders will soon afford proofs of their heartiness in the service. We have some communications on the matter, to which we shall give early consideration.

ST. ALBAN'S ARCHITECTURAL SOCIETY.—A meeting of this society was held on Wednesday in last week, at the Town Hall, St. Alban's. The attendance was numerous, and the Earl of Verulam, president, occupied the chair. The following papers were read—"On the Tapestry of Bayeux," by the Rev. T. Lee (honorary secretary); "On the Rise and Progress of the Art of Coining," by Mr. J. Evans; "On Verulam and the adjacent Antiquities," by Mr. R. G. Lowe.

THE BRISTOL AND WEST OF ENGLAND ARCHITECTURAL SOCIETY.—The report of this society, just now published, is illustrated by drawings of the south doorway, sedilia, &c., in the Holy Trinity Church, Westbury-on-Trym, and the proposed elevation of the Bristol High Cross, accompanying a paper on that subject. The doorway of Westbury Church was restored at the expense of the society.

THE QUEEN'S COLLEGE, CORK, built from the design of Sir Thomas Deane, and illustrated by us some time ago, was opened on the 7th inst. The position of the building and its general effects are described as being admirable. We shall re-produce our view in the forthcoming number of "Buildings and Monuments."

TO DESTROY ANTS.—I have never known a solution of alum and potash in hot water to fail as a cure for ants in timber, but it must be applied boiling hot.—C. W. ORFORD.

* Readers of THE BUILDER may serve us by making known this work to friends who might not care to be subscribers to the journal, and yet would take "Buildings and Monuments," if they knew its scope and contents. It will be completed in eight parts, and will form, we venture to think, an interesting volume.

TENDERS

Delivered for the erection of public Baths and Washhouses, in St. Ann-street, Westminster; Mr. P. P. Baly, engineer.

Wilkinson	£7,077
Howlett	6,700
Robson	6,700
Ellison	6,697
Piper	6,696
Hodges	6,690
J. F. Taylor	6,659
Howard	6,616
Homan	6,614
Bowley	6,600
Edser	6,596
Haward and Nixon	6,587
Carter	6,585
Yeoman	6,570
Rigby	6,545
Hicks	6,420
Anson	6,396
Sanders and Woolcot	6,359
Jay	6,324
Stephan and Easton	9,296
Trego	6,279
Scipons	6,276
Higgs	6,229
Rudkin	6,198
Glenn	6,184
Barr	6,157
H. W. Cooper	6,141
T. Burton	6,049
Locke and Nesham	5,950
Wilson	5,943
Winsland and Holland	5,929
Hill and Co.	5,884
Taylor	5,879
Curtis	5,744
Myers (accepted)	5,738

MEETINGS OF SCIENTIFIC BODIES

Held during the ensuing week.

MONDAY, Nov. 19.—Institute of Architects, 8 P.M. Dr. Buckland, on Artesian Wells.

THURSDAY, Nov. 22.—Royal Society, 8½ P.M. Antiquaries, 8 P.M.

FRIDAY, Nov. 23.—Archæological Association, 8½ P.M.

TO CORRESPONDENTS.

"New Churches, Westminster, and elsewhere," notices postponed.

"*Dante.*"—An architect's commission on a building erected, under his superintendence, of *old materials*, may fairly be charged on what would have been its cost if of *new*.

"G. M." (name was not in either of the lists forwarded to us). "W. L. M." (says "Smith" should be read instead of "Rolt," in list of tenders for India Docks and Birmingham Railway. Mr. Merrett's name was omitted: his tender was 39,062*l.*), "C. L.," "A. B." (the amount of population and other data require to be considered as well as those stated: we must decline giving the specific detail required), "L. B." (we are forced to decline pointing out books), "Wykehamensis" (shall not be lost sight of), "S. P. H. W." (there are several machines for making bricks now before the public, but we are unable specially to refer our correspondent to them), "J. K.," "J. J. L.," "W. W.," "T. Y. K." (we have reason to believe that the French publication in question has succumbed beneath political disturbances), "J. D.," "An Amateur," "J. S." (the "table" has not reached us), "S. B. G.," "J. L. G.," "G. G. S.," "S. H.," "R. S.," "Z." (the story underground is the basement), "G. C." (we are sorry we cannot advise. "G. C." gave no address or explanation as to Post-office stamps enclosed), "J. G.," "W. H." (will find what he wished), "J. R.," "Free Hand Studies," by J. Dwyer and E. C. Laugher; Ackerman. "Holy Matrimony Illuminated," by Owen Jones; Longman and Co.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

PAPER-HANGINGS by MACHINE and BLOCKS.—The trade supplied in town and country, with machine goods, from first-rate new designs, at the lowest prices they have ever been sold in this country; and block goods, for style and quality, not to be surpassed by any house in England. All the patterns are registered, and can only be supplied by HENNELL and CROSBY, Queen-street, Southwark-bridge-road. Cheapest house in London for oak, marbles, and panel decorations. A set of patterns, 5*s.*, to be deducted off an order of 5*l.*—Terms, cash.

PAPER-HANGINGS—At E. T. ARCHER'S Manufactory for English and Warehouse for English and French Paper-hangings, from One Penny per yard, to the most costly pannelled decorations. The decorations are fitted up on the walls of an extensive range of show rooms, showing at one view a drawing or dining-room finished, fit for occupation.—Painted marble or granite papers of superior fabric, from One Penny per yard.—451, Oxford-street.

FRENCH MACHINE PAPER-HANGINGS, MADE IN ENGLAND by patent machinery and blocks, from choice and original designs, adapted to every purpose, from the four-roomed cottage to the mansion, at prices varying from 6*d.* to 1*s.* per piece of twelve yards long. The trade and builders are respectfully requested to inspect the new spring patterns, of which stock is now ready, in conjunction with a most magnificent assortment of Parisian, gold, and chintz papers, from 2*s.* 6*d.* to 6*s.* per roll, duty paid.—MARKS and Co., Paper Stainers—Warehouse, 59, Princes-street, Leicester-square.

PAPER-HANGINGS.—TO BUILDERS and LARGE CONSUMERS.—ROBERT HORNE, Paper-hanging Manufacturer, 41, Gracechurch-street, City, invites builders and the trade to inspect his extensive stock of NEW DESIGNS IN PAPER-HANGINGS, which, by the aid of powerful machinery, he is enabled to offer at the following unprecedented prices, in stock quantities, for cash only, viz.:—

Bed-room papers, in great variety	at	5d.	30 Pieces.
An excellent oak paper	at	9d.	
Sitting-room ditto, on blended grounds	7d. to	9d.	
Hand-made marbles	1s. 0d. to	1s. 6d.	
Good satin papers	1s. 9d. to	2s. 0d.	
Rich flock papers (by a new process) ..	2s. 0d. to	2s. 6d.	

In addition to which, he has always on hand every novelty in French damask papers and Decorations, which he imports direct from the best manufacturers in France, as soon as their new patterns are ready to select from.—R. H. also calls their attention to his new designs in satin fillings for panelled decorations of his own manufacture, all of which he has registered, and to his excellent imitations of fancy woods (for specimen see *Journal of Design* for October), which include pollard oak, root of oak, mahogany, rosewood, maple, and satin wood; and are much superior to any hitherto manufactured on paper. To be obtained only at HORNE'S Wholesale and Retail Warehouse, 41, Gracechurch-street, City.—N.B. Patterns sent into the country, showing the style and quality of the above, on receipt of two postage stamps, and the goods despatched with promptitude on receipt of a remittance to the amount of the order given.—Folding screens in great variety, wholesale and retail.

TO BUILDERS' WORKMEN.—The NATIONAL FRIENDLY SOCIETY embraces all the advantages of a Benefit Club without its numerous disadvantages. Assurances may be effected to provide against death, sickness, and old age, and the profits are divided entirely amongst the members. Every information may be obtained on application at the Chief Office, 18, Red Lion-square, London.

W. J. REYNOLDS, Secretary.

*** Prospectuses sent on receipt of a penny stamp. Agents wanted.

BRITISH MUTUAL LIFE OFFICE.—The Public are invited to examine for themselves the advantages gained for Assurers by the plan on which policies are granted by this Office.—Apply to CHARLES JAMES THICKE, Secretary, 17, New Bridge-street, Blackfriars.

ARCHITECTS', BUILDERS', and GENERAL FIRE and LIFE INSURANCE COMPANY, 69, Lombard-street, London.

CHAIRMAN, SYDNEY SMIRKE, Esq., A.R.A.

TRUSTEES.

T. L. Donaldson, Esq. | A. Salvin, Esq., F.S.A.
S. Grimsdell, Esq. | G. Smith, Esq., F.S.A.

The rates for both Fire and Life Insurances are as low as can with safety be taken. Those for Life Insurance may be paid either yearly, half-yearly, or quarterly; one-half the annual premium may be left unpaid for seven years, or one-third to the end of life. Thus large sums may be insured at the smallest present outlay.

Prospectuses, forms of proposals, &c., may be had at the Office 69, Lombard-street, or of the agents.

JOHN REDDISH, Manager.

VICTORIA LIFE ASSURANCE COMPANY, 18, King William-street, City.

Residence in many of the Colonies allowed, without additional charge, and the premium required for the East or West Indies, and other extra risks, is more than usually moderate.

On policies taken out for the whole term of life, one-third of the annual premiums may remain unpaid till death; thus parties are enabled to effect an insurance, say for 1,000*l.*, by the payment of premium on 800*l.* only.

The half-credit system for five years is also adopted.

Four-fifths, or 80 per cent. of the entire profits are appropriated to assurers entitled to share therein.

Advances continue to be made to assurers on assignable property or income, and also on the guarantee of most undoubted personal sureties. WILLIAM RATRAY, Actuary and Secretary.

NATIONAL LOAN FUND LIFE ASSURANCE SOCIETY, 26, Corn-hill, London. Capital, 500,000*l.* Empowered by Act of Parliament.

The leading features of the Society are—Guarantees of an ample proprietary capital. Moderate rates of premium. Two-thirds premium loaned to the assured. Annual division of profits. Half the premium may remain as a loan for five years. Extensive travelling leave granted without extra premium. Moderate extra premium for residence in tropical climates.

N.B. The last annual bonus to the assured varied from 27 to 65 per cent. (according to age) on the premiums paid.

For prospectuses, with detailed information, apply at the office, or any of the branches, by post or otherwise.

W. S. B. WOOLHOUSE, Actuary.

GREEN'S REGISTERED WIND-GUARD.

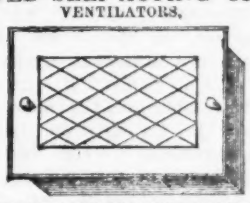
By this simple contrivance smoke in rooms is thoroughly prevented in all winds. It can be fixed securely on the chimney-pot (by any person) in a few minutes; it makes no noise, and can be cleaned out by the common sweeping machine.

May be had at 3, Vittoria-place, Euston-square, London (back of the Church). Price, from 6*s.* to 8*s.* 6*d.*

For the size take the outside diameter of the top of the pot.

N.B. Agents wanted.

IMPROVED SELF-ACTING CHIMNEY VENTILATORS,

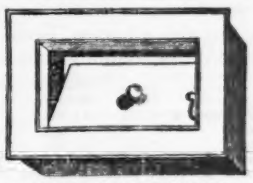


FOR CARRYING OFF HEATED AND IMPURE AIR from drawing-rooms, sitting-rooms, bed-rooms, nurseries, offices, &c. &c., from 4*s.* 6*d.* each.—BURT and POTTS, Manufacturers and Ironmongers, 65, York-street, Westminster, London.

Stoves, ranges, rain-water pipes, gutters, and builders' ironmongery, as low as any house in London. Delivered free within 5 miles.

DR. ARNOTT'S VENTILATING CHIMNEY VALVE,

With internal movement, and all the latest improvements.



Constructed for the ventilation of apartments generally.

REDUCED LIST OF PRICES.

	First size, 11 by 8.		Second size, 16 by 9
Plain Iron Valve	6 0		9 6
Bronzed and Leathered	7 0		10 6
Japanned, white with Gold lines	11 6		16 6
Ditto with Trellis-work	17 0		23 0
Brass Front, lacqd. or bronzed ..	13 6		19 6
Ditto with Trellis work	19 0		27 0

Ventilators of any description made to order.

Manufactured by HART and SONS, 53, 54, 55, Wych-street Strand London.—Post-office orders payable at 180, Strand.

JUCKE'S PATENT SMOKE-CONSUMING FURNACE.—The above is in successful operation at the under-mentioned places, viz.:—Three at Her Majesty's Mint; three at the Artesian wells, Trafalgar-square; one at the Tower; two at the Thames Tunnel; ten at Price's Candle Company; five at Messrs. Craven and Lucas's, sugar refiners, and at the following breweries—ten at Messrs. Truman, Hanbury, and Co.'s; six at Messrs. Elliott and Co.'s; one at Messrs. Barclay, Perkins, and Co.'s; one at Messrs. Combe, Delafield, and Co.'s; and one at Messrs. Thorne and Sons'. Upwards of forty are in use at different steam-mills. It also in operation in a reverberatory furnace at the Mint, and is particularly adapted for smelting or heating metals or other materials. The entire consumption of smoke, great economy of fuel, and the certainty of a steady fire, which can be regulated at pleasure, and made of the refuse or screenings of coals, render this patent invaluable for all manufacturing purposes. It is admirably adapted for steam-boats and locomotive engines where coke or anthracite coal is now used. The proprietors are willing to sell the patent right, for any city, town, district, or country, or to any steam-boat or railway company; also for Scotland, Ireland, the Colonies, or Holland. The French patent right is sold, and working well in France and on board the French frigate *Prometheus*. For terms to manufacture the patent, apply to Messrs. QUILTER, BALL, JAY, and CROSBIE, 57, Coleman-street, London. Furnaces can be supplied by the following engineers, who are already licensed to manufacture the patent:—Sumon and Co., Canal-bridge, New North-road, Hoxton; Joseph Beaumont, Leman-street, Whitechapel; Easton and Amos, Grove Guildford-street, Southwark; Jno. Wood and Co., Sowerby-bridge Halifax; and John Gray and Co., Rhodes Iron Works, Chester.

REDUCED PRICES.—EDWARD SIMMS (late William Cleave), of Wilton-road, Pimlico Basin, begs to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned OAK and DEAL PREPARED FLOORING BOARDS and MATCH BOARDING of all sorts, from ¾ inch to 1¼ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Mouldings prepared by Machinery, Laths, &c.—Apply at E. SIMMS'S (late W. Cleave's) Flooring Manufactory, Wilton-road, Pimlico Basin.

FLOORING.—ALFRED ROSLING begs to inform his customers and the trade generally, that he has again very materially REDUCED the PRICES of his DRY FLOOR BOARDS, of which he has in stock an extensive assortment. To purchasers of a quantity of freshly prepared boards A. R. is able to offer a great reduction upon his current prices, to avoid the expense of piling away in the drying sheds. Mouldings in great variety, and prepared in a very superior manner.—Southwark-bridge Wharf, Bankside, October, 1849.

THOMAS ADAMS, Mahogany and Timber Merchant, Bermondsey New road, Southwark, near the Bricklayers' Arms, is SELLING SEASONED FLOORING at LESS PRICES THAN ANY ADVERTISED; also matched boards and mouldings prepared from the very best material, and in a superior manner. Cut deals and scantlin of every dimension; mahogany, cedar, rosewood, wainscot, elm, beech, oak, &c.; pantile, oak, and fir laths; wheelwrights' goods. All sawn and prepared goods (except timber) delivered free of expense. Sawing charged at mill prices. Very extensive drying-sheds.

N.B. English timber taken in exchange for foreign.

SEASONED SPRUCE FLOORING, prepared by improved machinery, in a superior manner.

Three-quarter inch thick .. 10*s.* 6*d.* per square.
One inch ditto .. .. .. 13*s.* ditto.

SAMUEL ARCHBUTT'S Sawing and Planing Mills, King's-road, Chelsea.

MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANK, DEALS, and BATTENS, &c., Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills, Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

GENERAL WOOD-CUTTING COMPANY.—SAWING, PLANING, AND MOULDING MILLS, Belvedere-road, Lambeth, between the Suspension and Waterloo Bridges. SAWING and PLANING in all their branches executed with the greatest despatch and punctuality. A large Stock of seasoned and beautifully WORKED MOULDINGS, consisting of upwards of 100 different patterns kept constantly on hand; also an extensive assortment of dry prepared FLOORING BOARDS, of all qualities and at reasonable rates.

PHILLIPS, ALLCARD, and CO.'S IMPERIAL DEAL SAW-MILLS, WENLOCK-ROAD CITY-ROAD, beg to invite the attention of builders, carpenters and the trade, to their well selected stock, consisting of a large assortment of TIMBER, DEALS, PLANKS, and BATTENS, of every description, and thoroughly seasoned. They also have constantly on hand, and ready for immediate use, white and yellow prepared FLOORING BOARDS of all thicknesses, and matched lining, cut and planed to a parallel breadth and thickness. And they are enabled to offer all their goods at very moderate prices

DESICCATED WOOD.—DAVISON and SYMINGTON'S PATENT.—Builders, Cabinet-makers, and others, will find it much to their advantage to patronise this new process of seasoning. The greenest wood can thus not only be seasoned in an incredibly short space of time, at a small cost, but is rendered stronger, entirely free from shrinkage, and in every respect better than wood treated in the ordinary way; thereby saving capital, interest of money, insurance, and all the other inconveniences attending the keeping of a large stock.

The DESICCATING SAWING and PLANING MILLS are situated at PLOUGH BRIDGE, ROTHERHITHE, adjoining the Commercial and East Country Docks, from whence parties obtaining their material can have the same converted as required, and sent home fit for immediate use.—T. GIRLING, Manager.

For licenses to use the patent, scale of prices, or other information, address, ANGUS JENNINGS, Secretary, Patent Desiccating Company, 41, Gracechurch-street, City.

TO ARCHITECTS, BUILDERS, UPHOLSTERERS, AND OTHERS.

WOOD CARVING done in the cheapest and best manner. Estimates given to any amount. Pulpits, reading-desks, altar-rails, stalls, and other church fittings supplied complete. Old carvings restored by J. STALON, Wood Carver and Manufacturer, 42, Berwick-street, Soho, London.

JORDAN'S PATENT MACHINE CARVING and MOULDING WORKS for WOOD and STONE, Belvedere-road, Lambeth, and 154, Strand.—TAYLOR, WILLIAMS, and JORDAN beg to call the attention of the building community to a new feature of their establishment, and, at the same time, to thank their numerous patrons and friends for the very liberal support they have lately experienced, which, they assure them and the public, it will be their constant endeavour to deserve, by giving their customers an increasing share of the advantages arising from the constant improvements in the machinery which they have just succeeded in applying to the production of the most intricate carving in Caen and other freestones, and in statuary marble.

T., W., and J. particularly solicit the attention of architects and builders to the fact that, by the use of this machinery, a very large saving, both of time and money, is effected,—so great, indeed, that in many cases they can deliver a well-finished article in Caen stone for less money than it can be obtained in cement, while their wood-carving will, in some cases, be found to come into close competition with the best kinds of composition ornament.—For prices and estimates apply at 154, Strand.

TESTIMONIAL FROM CHARLES BARRY, ESQ.

"Westminster, May 16th, 1848.

"Gentlemen,—In reply to your letter requesting my opinion of your patent Carving Machinery, I have much pleasure in stating, from an experience of more than two years, in its application to the production of the wood carvings of the House of Peers, and other apartments of the New Palace, at Westminster, that I am enabled to make the most favourable report concerning it, and to add that it has more than justified the favourable terms in which I recommended it in 1845 to her Majesty's Commissioners of Woods and Works for adoption.—I remain, Gentlemen, yours faithfully,

"CHARLES BARRY."

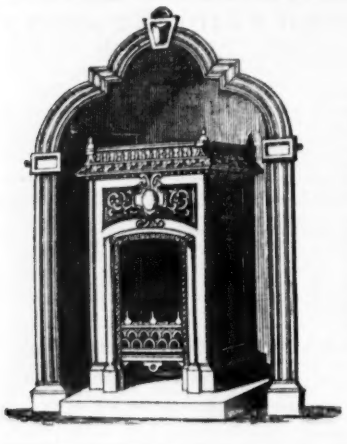
Messrs. Taylor, Williams, and Jordan."

BUILDERS AND CONTRACTORS.

TARPAULINS for COVERING ROOFS during Repairs. SCAFFOLD CORD and every description of ROPE used by Builders upon the lowest terms. Marquees and temporary awnings on sale or hire. Orders per post receive the most prompt attention.—WILLIAM PIGGOTT, 115, Fore Street, City, Manufacturer, by Appointment, to Her Majesty's Honourable Board of Ordnance.

TO THE BUILDING PUBLIC.

FIRST-RATE ORNAMENTS in PORTLAND, ROMAN and other CEMENTS, and PLASTER of PARIS, at reasonable prices, consisting of Vases, Balusters, Capitals, perforated Panellings, Cantilevers, Brackets, Trusses, Wreaths, Scrolls, Masques, Heads, Figures, Friezes, Gothic and other Chimney-Shafts, Soffits, Bed-moulds, Paterae, &c., &c. Centre Flowers from 10 feet diameter downwards. An assortment of Shop-front Trusses always ready for fixing.—HERBERT and SON, Modellers, &c., 42, Parker-street, Drury-lane.



IMPORTANT IMPROVEMENTS IN WARMING AND VENTILATING

CHURCHES, CHAPELS, INFANT AND OTHER SCHOOLS, PUBLIC BUILDINGS, PRIVATE DWELLINGS, &c. &c.

PIERCE'S PATENT PYRO-PNEUMATIC STOVE GRATE

Is SELF-ACTING, and combines SUMMER WARMTH, PERFECT VENTILATION, SIMPLICITY OF ARRANGEMENT, NOVELTY OF PRINCIPLE, and ELEGANCE OF DESIGN, which, with great ECONOMY IN USE, renders this GRATE suitable for any situation where a POWERFUL DEGREE of WARMTH and the CHEERFUL OPEN FIRE are desirable.

PIERCE having at length succeeded in producing that long-sought *desideratum*—a HEALTHFUL AND SALUBRIOUS atmosphere, such as is felt on a pleasant summer's day, which can, by means of this his Patent Pyro-Pneumatic Stove Grate, be enjoyed during the most dull and dreary of our winter months. The above invention is specially adapted for warming churches, infant and other schools, railway offices, entrance halls, banking houses, &c., &c., or any situation where warmth and purity of air are desirable.

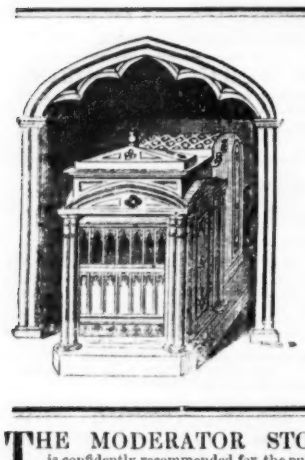
IT MAY BE SEEN IN DAILY USE AT THE PATENTEE'S MANUFACTORY, 5, JERMYN-STREET, REGENT-STREET; Also at the POLYTECHNIC INSTITUTION; the UNIVERSITY HALL, GORDON-SQUARE; the new OSTRICH and GIRAFFE HOUSES of the ZOOLOGICAL SOCIETY, REGENT'S-PARK; the large MODEL ROOM of the SOCIETY OF ARTS, JOHN-STREET, ADELPHI, where, after a lengthened trial of it in daily use, the Council awarded their large Silver Medal for the invention.

PIERCE'S PRACTICAL EXPERIENCE (of upwards of thirty years), during the whole of which time he has been actively engaged in WARMING and VENTILATING PUBLIC BUILDINGS and PRIVATE MANSIONS of all descriptions by his Improved Method of HEATING with HOT WATER; also his ECONOMICAL RADIATING STOVE GRATES, which are elegant and effective, enable him to recommend this PYRO-PNEUMATIC GRATE with the utmost confidence,—the Air breathed from which has all the FRESHNESS and PURITY of the EXTERNAL ATMOSPHERE, and consequently its action meets the want, which has so long been felt, of some method whereby the houses of all, both rich and poor, might be alike rendered healthful.

PIERCE'S MANUFACTORY AND SHOW-ROOMS, 5, JERMYN-STREET.

Where innumerable Testimonials and References can be given.

N.B. THE TRADE SUPPLIED, AND A LIBERAL DISCOUNT ALLOWED.



FOR CHURCHES, CHAPELS, SCHOOLS, WAREHOUSES, PRIVATE DWELLINGS, &c. &c.

NOTT'S PATENT STOVES,

After TWENTY YEARS' TRIAL, still maintain their decided superiority. They give twice as much heat as any other stove, with a smaller consumption of fuel; they burn for eight or ten hours without replenishing; they do not generate offensive and dangerous gases; and they have, when lighted, a very

BRILLIANT AND CHEERFUL APPEARANCE FROM THEIR TRANSPARENT FRONTS.

By the addition of a BOILER AND HOT-WATER PIPES, they may be made to heat, at the same time, DISTANT APARTMENTS, CONSERVATORIES, &c. They are made in various sizes and patterns, and the PRICES have recently been GREATLY REDUCED.

A STOVE AT TWELVE GUINEAS, AS SHOWN AT SIDE, WILL WARM A SMALL CHURCH.

Two or three hundred references can be furnished on application; only a few can be mentioned here, viz.:—

St. Saviour's Church, Southwark.
Christ Church, Westminster.
Trinity Church, Brompton.
Old St. Pancras Church.
Christ Church, Hoxton.
St. Vedast's, Foster-lane.
Portman Chapel, Baker-street.
The Pantheon, Oxford-street.
National Debt Office, Old Jewry.
Picture Gallery, Knightsbridge (late Chinese Exhibition).
Religious Tract Society, St. Paul's Churchyard.
Mr. Parker, West Strand.
Mr. Gilbertson, Ludgate-hill.
Messrs. Perkins and Bacon, Fleet-street.
Messrs. Ridgway and Co., King William-street.
St. Pancras National Schools.
Finsbury Charity Schools.
Stepney Grammar School, &c. &c.

J. L. BENHAM AND SONS, 19, WIGMORE-STREET, CAVENDISH-SQUARE, PATENTEES.

N.B. THE USUAL ALLOWANCE TO THE TRADE.

THE MODERATOR STOVE GRATE is confidently recommended for the purity of its heated air, as the most delicate lungs will not be affected by it; great economy of fuel, burning only 26 lbs. weight of coal in twelve hours, and perfect ventilation, with most cheerful appearance. May be seen in daily use at the inventors and sole manufacturers', METHLEY'S, 53, Frith-street, Soho. Price 8l. for third size.

TO ARCHITECTS, BUILDERS, &c.

HAYWARD, BROTHERS, late R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.

Strong Self-acting Kitchen Ranges, with Back Boiler and Oven and Wrought Bars:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£3.	£3. 10s.	£3. 15s.	£4.	£4. 10s.

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£5.	£5. 15s.	£6. 5s.	£6. 10s.	£7.

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

TO BUILDERS and CARPENTERS.—Elliptic Stoves, double backs, 2½d. per inch. Registers, 6d., 6½d. 7½d., per inch.

Cottage Ranges, with Ovens and Boilers, 2 ft. 2 in. 40s.; 3 ft. 4 in. 42s.; 3 ft. 6 in., 44s. 3 feet Cottage Ranges, 38s.

Self-acting Ranges, with Circular Oven and Back Boiler, best Wrought Bars and Bright Fittings,
3 ft., £2. 18s. 3 ft. 6, £3. 7s. 4 ft., £3. 15s.

Best Patent Cut Clasp.

4½d.	5d.	7d.	10d.	1s. 2d.	1s. 8d. per 1,000
3d.	4d.	6d.	8d.	10d.	20d.

Best Sheet Floor Brads, 12s. 6d. per cwt.
Best Town Glue 38s. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

4s. 3d.	5s.	6s. 6d.	7s. 6d.	10s.	12s. per gross.
1	2	3	4	5	6

At F. R. WILLIAMSON'S IRONMONGERY and STOVE WAREHOUSE, 35, Chiswell-street, Finsbury-square.

Lists of Prices had on application at the Warehouse, or by letter pre-paid, inclosing postage stamp.—Warehouse closes at 7 o'clock.

FULKES' IRONMONGERY and STOVE WAREHOUSE, 91 and 92, Park-street, Camden Town.

Elliptic Stoves, with double backs..... 2½d. per inch.
Register ditto, ditto ..... 5d. per inch.
Sash Weights..... 5s. 9d. per cwt.
Iron Rain-water pipe,.... 2½ inch, 10d.; 3 inch, 1s. 1d. per yard.
4½ inch O.G. Guttering ..... 1s. per yard.
6 inch Rim Locks, with patent spindles ..... 14s. per dozen.
Mortice Locks, with patent spindles ..... 33s. per dozen.
Delivered carriage free, within 5 miles.

OLD-ESTABLISHED WHOLESALE IRONMONGERY WAREHOUSE, Kitchen-range, and Stove-grate Manufactory, 18, Cross-street, Walworth.

JOHN GRICE most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Registers, from 6d. per in. and upwards.
Bright ditto with Black and Bright Bars, 2l. 10s. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler:—
3 ft., 2l. 8s. 3 ft. 6 in., 2l. 15s.
Elliptic Stoves, with double backs, 3d. per in.

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 8s. per pull.

TO BUILDERS, CARPENTERS, &c.—The undermentioned are the PRESENT PRICES of IRONMONGERY, at YOUNG'S, 194, Oxford-street. Every other article equally low. Orders executed upon receipt of remittance or a respectable London reference.

	2	2½	3	Inches.
Cast Butts.....	8s. 3d.	7s. 6d.	11s.	per 6 dozens.
Cut Clasp.....	5d.	7d.	1s. 3d.	1s. 8d. per
	4d.	6d.	10d.	20d. per 1,000.
Nos.	3	4	6	8
Patent Line	6s. 6d.	7s. 3d.	9s. 10d.	13s. per gross
	2	2½	3	Inches.
Rain Pipe	11d.	1s. 1d.	1s. 3d.	per yard.

IRON FOUNDRY, 80, Goswell-street (late of Brick-lane, St. Luke's).—J. J. JONES having made great additions to his STOCK of PATTERNS, begs to inform the Trade, that he can now supply them with Plain and Ornamental Iron Columns Girders, Railings, Gates, Iron Coping, Balconies, Window Guards, Verandahs, Ornamental Staircase Panels, Iron Staircases, Tomb Enclosures, Trellis Panelling, Lamp and other Brackets, Cantilevers, Newel Bars, Water Closet Work, Area Gratings, Fly and other Wheels, Wheel Plates, &c.

BAKER'S OVEN WORK, Forge Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

PROTECTION from FIRE, and GREAT ECONOMY in BUILDING.—A pamphlet, descriptive of the method by which both these important objects are secured, may be obtained on application to Messrs. FOX and BARRETT, 46, Leicester-square.

HOT-WATER APPARATUS.—The attention of architects, builders, and others is respectfully requested to BENJAMIN FOWLER'S superior method of heating churches and chapels, halls, staircases, conservatories, forcing and greenhouses, manufactories and warehouses, kilns, rooms for drying timber, &c., and every variety of purpose for which artificial heat is required. Within the last twenty years some hundreds of buildings have been heated upon this plan, and the parties for whom they were executed are constantly expressing their satisfaction, also their willingness to vouch for their efficiency.

BENJAMIN FOWLER, late of 63, Dorset-street, removed to the new factory, Whitefriars-street, Fleet-street.

CAST-IRON PIPES, IRON WORK FOR OVENS, &c.

RAIN PIPES, &c.—F. A. TIDDEMAN, 81, Ann's Wharf, Earl-street, City, near Blackfriars-bridge, keeps a large stock of Rain Pipes, Heads, Shoes, Elbows, &c., half round and O. G. Gutters, Socket Pipes for Water or Gas, Flanch Pipes, Sash Weights, and other Castings; Iron Work for Bakers' Ovens of every description, fitted complete, to be had in sets or in parts.—Prices equal to all competition. Contracts taken to any extent. Goods landed. A powerful crane.

TO GAS AND WATER COMPANIES, ENGINEERS, AND CONTRACTORS.

ANDREW M'LAREN & Co., Ironfounders, STEEL YARD WHARF, UPPER THAMES-STREET, have always on hand a large STOCK of SOCKET PIPES of all sizes, with the usual connections. Retorts, columns, girders, and all description of castings contracted for.

Their stock of goods for GENERAL IRONMONGERS is unequalled for variety and lowness of price: comprising, range, register, and elliptic metal and stoves, rain-water pipes, O. G., and half-round guttering, sash-weights, railing bars, panels, bakers' oven work, sink traps, air bricks, water closet metal, &c. &c.

Printed list of prices, and books of drawings for the use of ironmongers, forwarded on application.

CALIFORNIA.—The undersigned, having been informed that shipments of GALVANIZED METAL, both in unwrought state and formed for houses, are still going forward to California, again GIVE NOTICE that they ALONE have the right of importing, selling, or using galvanized metal, of any description, in the United States, including California, and that any parties infringing their rights, by importing or selling galvanized metal in California, will subject themselves to the stoppage of their goods, and to heavy penalties, which have been already enforced in several instances.—Any parties wishing to ship either galvanized metal or houses to California, will get every information on application to the undersigned.

MOREWOOD and ROGERS, Steel-yard Wharf, Upper Thames-street, London.

THE GALVANIZED IRON COMPANY, No. 3, Mansion-house-place.

Call the particular attention of Architects, Builders, and others, to their patent process of galvanizing, or coating iron with PURE ZINC, which, from its action being chemically true, effectually and PERMANENTLY prevents RUST. The process is applicable to all sorts of iron work (whether cast or wrought) in use for building purposes—such as ROOFS, gutters, girders, floors, WATER or GAS PIPES, railings, window sashes and guards, blinds, skylight frames, chimney cowls, cisterns, screws, nails, locks, keys, chains, wire guards, &c., &c., &c. The Company undertake to supply GALVANIZED IRON, or to GALVANIZE every description of iron work, in any quantity required.—Particulars and prices at the Offices of the Company, 3, Mansion-house-place. London Galvanizing Works, Millwall, Poplar. S. VINCENT, Secretary.

N.B. This Company's patent process is applied to the roofs of the New Houses of Parliament, the sheds in the dockyards at Woolwich, Portsmouth, and Devonport, the Waterloo Station belonging to the London and North-Western Railway Company, at Liverpool, and numerous other railway stations, &c., &c., with the most perfect success.

IRON ROOFING WORKS, SOUTHWARK.

Office,—3A, MANSION-HOUSE-PLACE, LONDON.

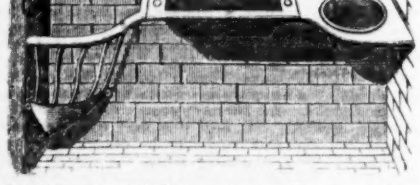
JOHN H. PORTER, PATENTEE

Of the Corrugated Iron Beams, Girders, and Fire-proof Floors;

MANUFACTURER OF IRON ROOFS AND BUILDINGS, Chiefly of

THE PATENT GALVANIZED IRON.

This material has been employed by J. H. PORTER for several years past in the construction of Iron Roofing for RAILWAY STATIONS and DOCKYARDS, at home and abroad; FARM BUILDINGS, FACTORIES, GASWORKS, WAREHOUSES, &c.; SUGAR-HOUSES, MEGASS and COFFEE-SHEDS, STORES, DWELLINGS, and MARKET-PLACES, in the East and West Indies, China, at the Cape of Good Hope, and in other parts of the world; Iron-bar and Strained-wire Fences, Sheep and Cattle Hurdles.



SAMUEL HOOD and Co., Castings Warehouse, 81, Upper Thames-street. REGISTERED STABLE FITTINGS. Enamelled Mangers, with double hay-racks, or with enamelled water-cistern on one side.—Also, girders, columns, hot water pipes, rain water pipes, eaves, gutters, sash weights, &c., at the lowest prices.

TO ARCHITECTS AND BUILDERS.

CHUBB'S WROUGHT-IRON and FIRE-PROOF DOORS and FRAMES, for strong Rooms. A large stock of the above, of all sizes, made in the best manner, and of different strengths, fitted with CHUBB'S PATENT DETECTOR LOCKS, throwing from two to twenty bolts, constantly on sale, at very moderate prices. FIRE-PROOF SAFES of every size, and Patent Detector Locks and Latches for all purposes.—C. CHUBB and SON, sole Manufacturers, 57, St. Paul's Churchyard, London.

LEADBEATER, FIRE-PROOF SAFE AND DETECTOR LOCK MANUFACTURER TO HER MAJESTY'S BOARD OF ORDNANCE.

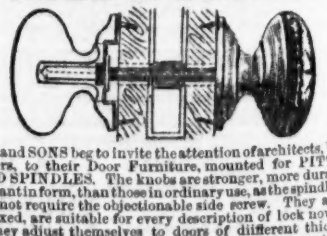
CAUTION to Purchasers of FIRE-PROOF DOORS for Strong Rooms, Safes, Chests, and Detector Locks, &c. &c. LEADBEATER, many years manufacturer for Chubb.

LEADBEATER begs most respectfully to inform Architects, Surveyors, Builders, &c., that he can supply them with IMPROVED DETECTOR LOCKS for universal purposes. STRONG WROUGHT IRON FIRE-PROOF DOORS, SAFES, and CHESTS, &c., on the most improved principles of security against FIRE and THIEVES, without the aid of "expensive machinery," which is employed by some inexperienced makers, but must be paid for; at prices 25 per cent. under any other house in London.

LEADBEATER offers ONE HUNDRED POUNDS reward to any person who can pick his improved detector locks or latches. Some thousands of Leadbeater's strong-room doors and safes have now been put up without a SINGLE COMPLAINT, and fifteen years' practical experience, during which he has adapted every possible improvement to real security, enables him to challenge competition with any house in London. A large assortment of all sizes on sale and made to order. A pair of extra strong wrought-iron fire-proof folding-doors with ventilating gates, made expressly for a banker's strong room, may be viewed at his manufactory. Strong wrought-iron doors for party walls, with wrought-iron rabitted frames, and secured by the BEST DETECTOR LOCKS in ENGLAND, 6 feet high by 2 feet 2 inches wide and upwards, price 10l. each, always on hand at LEADBEATER'S MANUFACTORY, 125, ALDERSGATE-STREET, LONDON.

By Her Majesty's Royal Letters Patent.

PITT'S PATENT SELF-ADJUSTING DOOR KNOBS AND LOOSE SPINDLES.



HART and SONS beg to invite the attention of architects, builders, and others, to their Door Furniture, mounted for PITT'S PATENTED SPINDLES. The knobs are stronger, more durable, and more elegant in form, than those in ordinary use, as the spindles, being loose, do not require the objectionable side screw. They are more readily fixed, are suitable for every description of lock now in use and, as they adjust themselves to doors of different thicknesses, without alteration, are particularly adapted for the country or for exportation.

In addition to an extensive stock of door furniture in china, crystal, amber, and opal glass, buffalo horn, ivory, ebony, brass, &c., en suite, with finger-plates, bell-pulls, and levers, new patterns of original design are constantly being added, and an order either to sketch or pattern supplied very promptly. A simple one, for example, in three days, and a more elaborate one in less than a week.—May be obtained through any ironmonger, or direct from the proprietors and sole manufacturers, HART and SONS Wholesale Ironmongers, 53, 54, 55, Wych-street, Strand, London.

A list of prices sent on application.